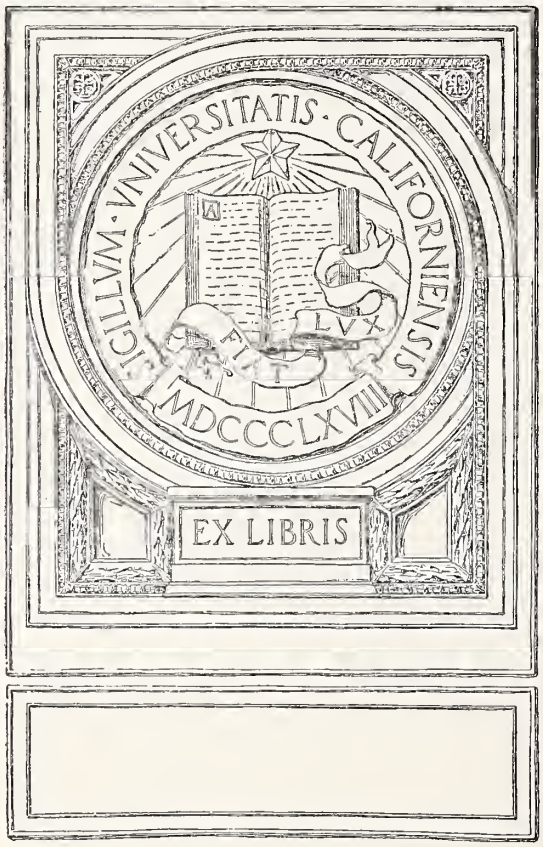
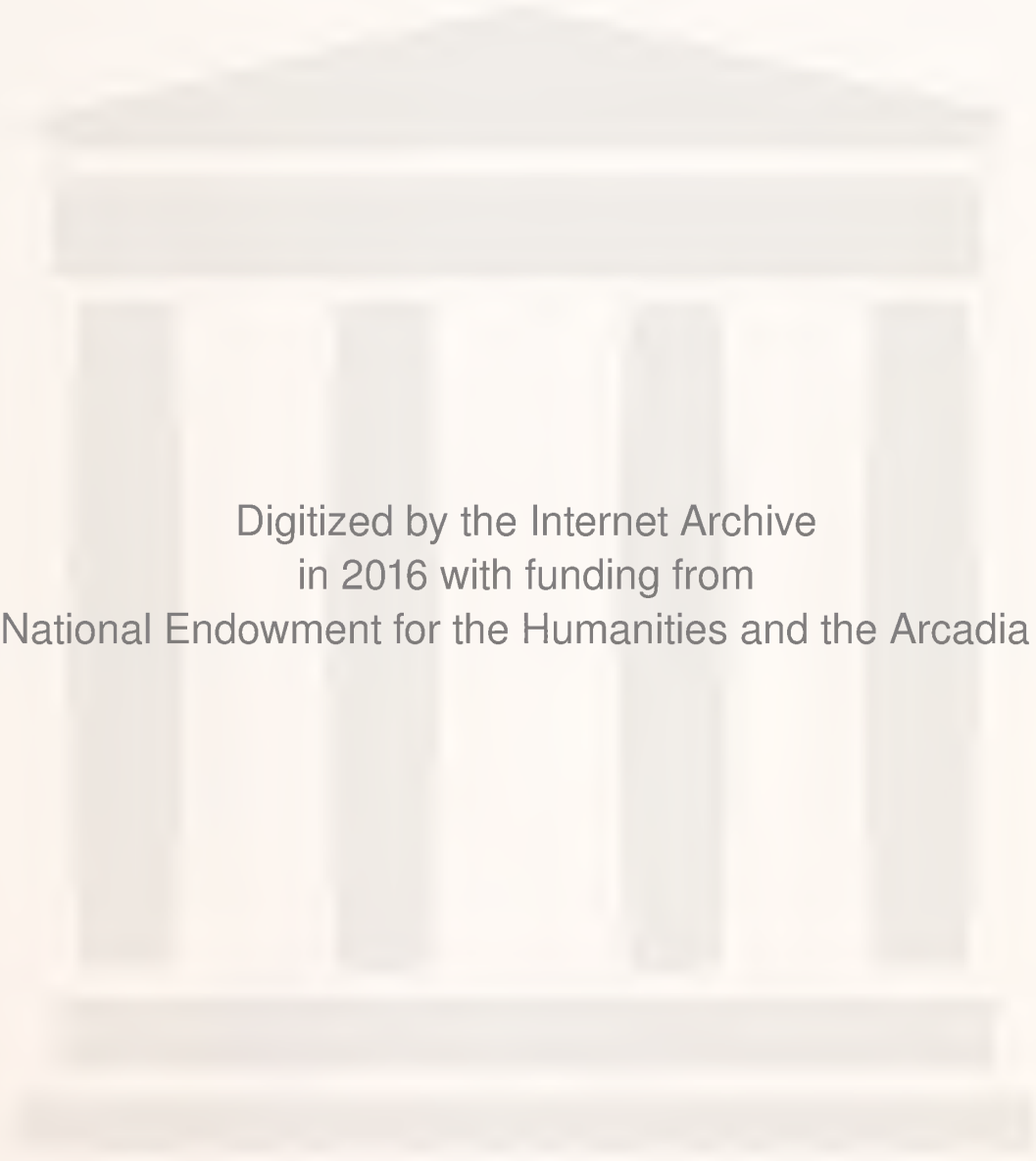
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The JOURNAL of The IOWA MEDICAL SOCIETY



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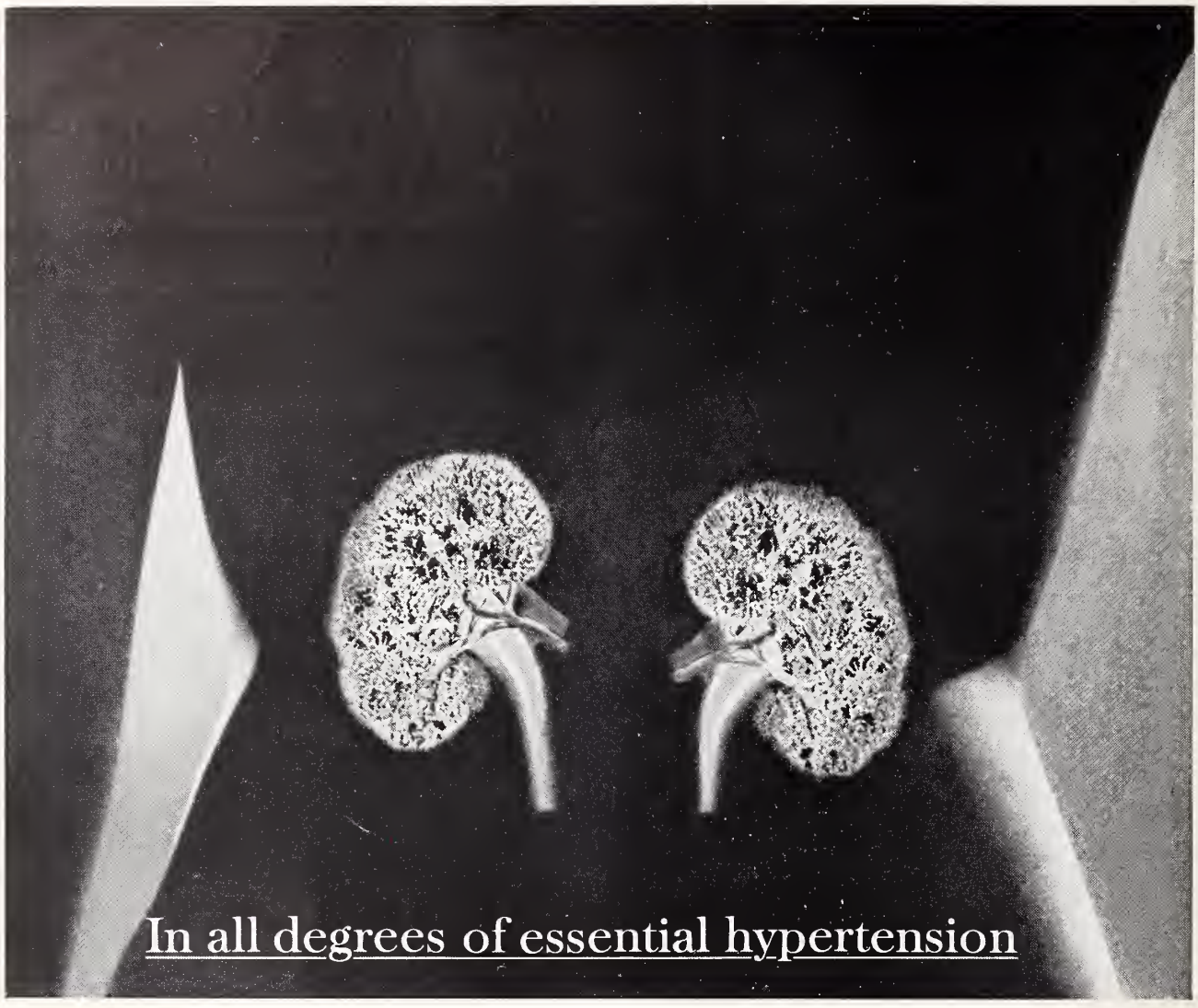
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Alcoholism— At What Stage Should The Doctor Enter the Picture?

CHARLES A. CHURAN, JR.
Des Moines

THE NEW LETTERHEAD of the Iowa State Commission on Alcoholism carries the slogan: "Alcoholism is a disease. It can be arrested through treatment, prevented through education."

The alcoholic patient brings a whole set of special treatment problems to the family physician. He asks the doctor to deal with a sickness which responds to no specific therapy. Usually, the patient fails to consult a doctor until his malady is well advanced. He cannot, or will not, give the doctor an honest history of his drinking. At his first medical consultation, he often is so sick and shaky that the doctor's first consideration is to take care of the patient's body—to get him physically well as soon as possible.

Moreover, in the usual course of events, the alcoholic fails to return for a second visit. Usually, he goes back to work, makes peace with his family, and behaves like a normal human being until his next bout of drinking. He continues this pattern until hospitalization becomes necessary.

The Commission on Alcoholism takes the positive view that this pattern can be changed if the family physician can shock the patient into realizing the seriousness of his illness. At the very outset, the doctor should explain to the patient that there is no cure for alcoholism, that alcoholism can be a fatal disease, or that it will lead to insanity. Finally, he should reassure the patient by explaining that *alcoholism can be arrested through treatment.*

ETIOLOGY

Long before 1955, when the AMA declared alcoholism to be a treatable illness, many psychologists examined the emotional aspects of alcoholism and arrived at this conclusion: "Compulsive drinking is an escape mechanism, a symptom of deep-seated emotional disturbance based on fear (insecurity). The disturbance produces a desire to to escape. The escape route most readily available, and one that is socially acceptable, is provided by the chemical ethyl alcohol in beverage form." It is the increased consumption of this chemical that brings the compulsive drinker to the family physician for medication and help.

TREATMENT

Viewed in this light, the role of the family physician becomes vital, and the doctor can begin the process of treatment. He can explain to the patient—man or woman—that he or she can never go back to so-called moderate drinking. The point of no return has been reached. From thence forward, the way is all downhill. Death or insanity is at the end of the spiral, if the drinking pattern continues.

The physician can show his understanding of the problem by helping the alcoholic to recognize and acknowledge his disease and his downhill progression. Does the patient hide his excessive drinking? Is his behavior aggressive, self-assertive? How many times has he "taken the pledge"? Does he have feelings of guilt and remorse where neither actually is warranted? Is he neglecting food? Does he need a drink to start the day?

By exhibiting this kind of knowledge of the patient's drinking pattern, the doctor will begin to win the confidence of the alcoholic. He can even win his friendship, for the alcoholic has reached the stage where he feels rejected. Establishing a doctor-patient relationship will bring the man or woman back for future consultations. Iowa figures indicate that 94 per cent of alcoholics at this stage can still pay their bills. Only 6 per cent cannot or will not.

Continuing the treatment, the doctor explains that he, personally, can do no more for the patient than to speed his physical recovery, and that the patient must immediately embark on a program extending into every phase of his life—into his business and social activities, his attitude toward people and his honesty in making an exact appraisal of himself. Just as the Greeks wrote on their temples "Know thyself," and just as Christianity teaches "Know thyself and know thy God," so the patient must find himself in relation to the values that really matter in his life. Most of all, he must be convinced that he cannot "go it alone." To rehabilitate himself, he must seek continuing treatment.

Many doctors recommend psychiatry. Many suggest Alcoholics Anonymous. Psychiatrists seeking a substitute and starting on the premise that the patient can never return to social drinking, have themselves suggested Alcoholics Anonymous or a church association that will lead the patient

---

Mr. Churan is executive secretary of the Iowa State Commission on Alcoholism. The functions of the Commission are (1) to promote education on the subject of alcoholism by distributing literature and providing speakers; (2) to evolve a statewide plan for the prevention of alcoholism; and (3) to coordinate efforts at treating alcoholics.

to an accumulation of spiritual strength. Carl Jung, after studying some 4,000 psychically disturbed patients, was convinced that the vast majority of them could have been benefitted or even cured as the result of a religious experience. I personally know of three women alcoholics who, after joining Alcoholics Anonymous, took "Step 5" with a psychiatrist recommended by a family doctor. This is logical. Step 5 reads: "Admitted to God, to ourselves and to another human being the exact nature of our wrongs." Confidence in the doctor's and the psychiatrist's integrity is the key here.

The late E. M. Jellinek, Sc.D., M.D., of the School of Alcoholic Studies at Rutgers University, concluded that all compulsive drinkers have a physical liability that may be hereditary or genetic. "The presence of such a physical liability factor," he declared, "may produce alcohol addiction *only if psychological tension should lead to a prolonged heavy use of alcoholic beverages as a sedative.*" Dr. Jellinek's chart showing the progression in alcoholism and based on 2,000 case histories, is available from the National Council on Alcoholism, Inc., 2 East 103rd Street, New York City 10028.

Fortunately, Leo B. Sedlacek, M.D., a member of the Iowa State Commission on Alcoholism, has written a handbook, ALCOHOLISM—WHAT CAN I DO ABOUT IT?, which is widely known and is readily available to doctors through the secretary of the Commission. Dr. Sedlacek has often pointed out that the alcoholic's first visit to the family physician could be his first step in a recovery program. The doctor, however, must be knowledgeable, realistic, firm, kind. Even though the causes of alcoholism are social, economic and moral, alcoholism is a true disease, just as tuberculosis and influenza are true diseases. That there is effective treatment, cannot be doubted. It is now estimated that of the 6,000,000 alcoholics in the United States, from 200,000 to 300,000 are enjoying continuing sobriety.

PREVENTION

That alcoholism can be prevented need not be doubted, either. But because of the very nature of the disease, all figures are open to question. Even the life insurance companies cannot tabulate accurately, for the alcoholic himself is the last person to admit that he has a problem. The following statement, however, is authoritative and of great interest to doctors who wish to tackle the problem of prevention. It is this: "One out of 15 young people, after taking the first drink, will develop into a problem drinker within five to seven years." This ratio confronts us with a true challenge, when we think of the thousands of young men and women in Iowa alone who, through an intelligent plan of education on the subject, could be forearmed with knowledge!

As a simple rule of thumb for doctors, we can divide alcoholism, or what will develop into alcoholism, into four phases:

1. *The pre-symptom stage.* It is very difficult to separate the sheep from the goats at this point. To outward appearances, the pre-alcoholic can be either a normal drinker or a heavy drinker. The main difference is that drinking will bring the pre-alcoholic a deep relief from tension—a deep release-sense. His need for alcohol increases as his tolerance increases. The physician is rarely consulted at this stage.

2. *The symptomatic (prodromal) stage.* The pre-alcoholic may have his first blackout at this stage. This blackout can last for minutes or for hours, during which the patient may function like a man who has merely consumed a few drinks. Significantly, he remembers nothing afterwards. Also at this stage, the pre-alcoholic begins the pattern of sneaking drinks, feeling guilty and being unable to discuss his problem realistically.

3. *Full-blown alcoholism.* The patient is now an alcoholic. He exhibits loss of control over the quantity of alcohol he consumes. He may "stay on the wagon" for weeks on end, but after the first drink, his behavior is unpredictable. He suffers delusions of grandeur, and becomes hostile toward his family, friends and work associates. He may quit his job or be fired. He becomes self-centered to the point that he will squander his pay check in taverns, even though his family needs food and clothing. His compulsion, after the first drink, leaves him powerless to stop drinking.

4. *Chronic addiction.* This phase is most clearly indicated by the patient's diminished tolerance for alcohol. Where he was once a hard, two-fisted drinker, he now exhibits a marked behavior change after just a few drinks. Even when he is sober, his mental faculties are diminished. His fears are undefinable and exaggerated. He is morose. Having taken the first drink, he often becomes violent when deprived of alcohol. His hangovers are almost insufferable to him—so much so that at this stage he can readily switch from alcohol to barbiturates or other readily obtainable sedatives. Many physicians avoid prescribing sedatives or even tranquilizers to alcoholics because alcoholic addiction and sedative addiction seem to stem from the same psychic disturbance or abnormal fears.

CONCLUSION

Unfortunately, there is no clearly defined line between any two of these stages in the desperate progression of alcoholism. The family doctor is most likely to enter the picture at any point in stages 2, 3 or 4. We believe the course of action he takes may turn the sufferer from a life of degradation and misery to one of happiness and fulfillment. We also believe that the successful treatment of alcoholics can be very rewarding. For the arrested alcoholic, having passed through an indescribable kind of "baptism of fire," can become an upstanding citizen. Although he was once a welfare liability, he can be a credit to his community.

Scientific Articles

The Treatment of Allergic Emergencies Other Than the Acute Attack of Bronchial Asthma

LAWRENCE J. HALPIN, M.D.
Cedar Rapids

AN ALLERGIC EMERGENCY may be defined as any parade of acute symptoms with sudden onset produced by a substance for which the patient has a sensitivity. The severity of the allergic emergency is influenced by, but not necessarily dependent upon, the route of exposure to the causative factors. It is directly associated with the degree of sensitivity possessed by the patient for that particular agent. Clinical symptoms may vary from simple discomfort to rapid death. The immediate availability and application of good, reliable treatment measures are the best means by which the discomfort may be relieved or a fatality may be averted.

The specific causes of the allergic emergency may be obvious or may be unknown to the patient or the physician. The methods and measures used to control the emergency are not determined by the causative substance. However, the more rapid the appearance of symptoms, the more acute is the allergic emergency.

Awareness of an impending emergency and preparedness to care for it properly should be two requisites for the practice of medicine. The manifestations of systemic reactions are present in every organ of the body, and no single organ can be identified as the constant site of shock. Systemic reactions may produce an extremely severe exacerbation of the symptoms associated with the patient's illness (if such be the case), or the findings may be independent and original. Predominantly, however, symptoms of an allergic emergency will involve the mucous membranes of the respiratory tract, and though other systems may be affected to a degree, these latter involvements are not usually of so alarming a nature as are those referable to the respiratory system.

The initial symptoms of an impending systemic reaction consist of tingling or itching sensations of the palms of the hands and/or the V of the neck. Nasal discharge, sneezing, itching and lacrimation, with or without generalized urticaria, progress into an alarming state of respiratory embarrassment. The severity of the reaction can be so rapid that death may occur almost before any symptoms other than collapse and shock are discernible.

The anaphylactic-type reaction is of such rapidity that symptoms involving the skin and respiratory tract do not have time to manifest themselves. The presence of urticaria and asthma may indicate that the reaction is not destined to be immediately fatal. In anaphylaxis, the vital organs will show generalized edema and hemorrhage at necropsy.

The antigenic material producing the allergic emergency may be ingested, inhaled or injected. To fit this classification, an *ingested* food substance must possess a high index of sensitivity. The foods most frequently incriminated in these instances are sea-foods, mustard, egg, nuts and cottonseed, among others. Aspirin, penicillin and/or any other drug when ingested, can produce acute

Dr. Halpin made this presentation at the 1963 Annual Meeting of the Iowa Medical Society.

and alarming symptoms which demand emergency treatment. *Inhaled* substances range from odors or gasses in heavy concentration to pollens and related atmospheric or environmental contaminants. *Injected* substances usually are drugs given by hypodermic injection, and the route of administration has some influence upon the rapidity of the reaction. The intravenous injection is more often associated with immediate symptoms than are the intradermal, the intramuscular and the subcutaneous, in that order. One should not infer however, that these latter routes are never associated with alarming or even fatal anaphylactic reactions. Intradermal test extracts or solutions frequently cause systemic reactions. Injectable drugs or similar antigenic materials are most commonly to blame—ones employed for *diagnosis* (contrast dyes, skin-testing extracts); for *therapy* of any existing abnormal state (penicillin, liver extract); or for the *prevention* of anticipated or threatening illnesses (anti-tetanus serum, insulin, pollen or other allergenic extracts). Included in this "injectable" category, too, must be the venom of the bee, wasp or any other insect for which the individual patient possesses a high degree of sensitivity.

TREATMENT

Epinephrine is the one drug upon which every physician should rely in treating the allergic emergency. This drug must be available immediately, it should be used without delay, and it should be used repeatedly if necessary. Help may be "too late and too little" if the physician or his aide leaves the patient to seek, prepare or measure this life-saving drug. Subcutaneous administration of epinephrine 1-1,000 (aqueous) in a dosage of 4-5 minims (0.25 ml.) is mandatory. Repetition of this dose at intervals of five to 10 minutes may be necessary, depending upon the severity of the reaction and the speed and progression of the symptoms. If the emergency has been produced by a drug or other material injected subcutaneously, intramuscularly or intradermally, the application of a tourniquet above the injection site will slow the absorption of the causative agent and will allow the emergency treatment measures to bring the reaction under control. Periodic release and re-application of the tourniquet will guide the physician in the control of the reaction and indicate the need for further measures. It is useless to apply a tourniquet to an extremity if the preparation causing the reaction has been administered by the intravenous route.

Epinephrine 1-1,000 should be given at the site of the original injection, above the tourniquet, and ALSO at a similar location in the other extremity. Thus, the epinephrine at the original site will tend to slow the local absorption while subsequent injections of epinephrine overcome or control the systemic symptoms of reaction. The dosage of epinephrine (0.25 ml.) can be, and should be, repeated for as long and as often as necessary, if the symptoms are responding in a satisfactory manner. Epinephrine may be given intravenously if the severity and the state of the reactions demand such a procedure. It must be emphasized that there are no recognized contraindications for epinephrine 1-1,000 in any patient or under any circumstances, when the need for this drug is apparent and its use is beneficial in the control of any symptoms. Epinephrine in other than an aqueous solution and routes of administration other than hypodermic have no place in the treatment of the allergic emergency. Inhalation of epinephrine 1-100, or the injection of epinephrine 1-500 in oil or gelatin are without value as a means of reaction control.

The relative slowness of the steroidal and hormonal substances precludes their use as immediate treatment agents. The steroids and ACTH, however, do play important roles in the prolonged control of the post-emergency state. ACTH (aqueous) may be added to an intravenous solution, in a suggested dose of 15 units in 500-1,000 ml. of fluid. In gel or prolonged-action form, 40 units twice daily will prove satisfactory in most instances. The most rapid of the injectable steroids are effective only after about 30 minutes, and in the allergic emergency this time lapse constitutes a serious loss. Intravenous steroids can be injected as rapidly as desired, and the suggested dosages are: Solu-Cortef® (hydrocortisone) 100 mg.; Decadron® (dexamethasone) 4 mg.; and Metacortelone (prednisolone) 50 mg. The total dosage in each instance should depend upon the patient's response.

Antihistaminic agents by any route—oral, subcutaneous or intravenous—are not reliable in controlling allergic emergencies. Their value may be as adjunctives in combatting allergic edema which may persist after the acute and alarming stages of the reaction have been dissipated. These drugs should never be employed to the exclusion of, or in substitution for, epinephrine. As emergency treatment aids, the injectable antihistaminic agents are of superior effectiveness when compared to the oral preparations. The strengths of most antihistaminic injectable solutions vary from 1 to 10 mg./ml. The dose for hypodermic administration is 1 ml. or less of the selected preparation. The sedation that usually is associated with the use of injectable antihistamines is a desirable side-effect in most instances.

Oxygen should be available, and its administration by nasal catheter or face mask may be of some benefit. At the rate of 2-6 liters per minute, this supportive therapy may add to the comfort of the patient and speed his eventual recovery. Additional measures may be employed to over-

come the marked degree of bronchospasm, if respiratory involvement is a dominant feature of the reaction. A SLOW infusion of intravenous aminophyllin is recommended, in a dose of 3¾ grains (10 ml.) or 7½ grains (20 ml.). The rate of administration should not exceed 2 ml. per minute. If symptoms of shock are apparent after the acute emergency state has been adequately controlled, additional fluids should be given. Aminophyllin may be added to this infusion, 7½ to 15 grains in 1,000 ml. volume of saline or glucose.

DISCUSSION

Because many of the allergic emergencies are iatrogenic in origin, it is wise for the physician to realize that he must exercise a good degree of caution and must establish a good degree of preparedness before giving a hypodermic injection of any agent to one of his patients. He should place intradermal diagnostic skin tests on an extremity, so that if necessary he can apply a tourniquet proximal to the test site. The back or the abdomen should not be a routine site for investigative studies in patients suspected of having allergies. Emergencies associated with the injection of antigenic treatment materials (i.e. pollen extracts) can be due to overdosage, accidental intravenous injection or back-seepage, and can be produced when the injected antigen enters a pierced vein. Incidentally, systemic reactions associated with the administration of pollen extract, though rarely fatal, are extremely upsetting to both the patient and the physician.

One can't prevent systemic reactions by combining antihistaminic drugs or epinephrine solutions with an "over-dosage" of pollen extract. Such combinations may allay the local swelling or delay the onset of the reaction, but those features are of transient importance.

Because of the amount of the drug that is used and the frequency of reactions associated with its administration, penicillin emergencies deserve a special word. The patient should not be exposed to penicillin by any route until he has been questioned concerning any signs or symptoms of reaction (or possible reaction) on previous usage. Caution should be exercised in ALL patients either with or without histories of previous reactions, and if such a history is positive or suggestively so, the drug should not be employed.

The reliability of a positive or negative scratch with penicillin is a controversial point. A positive scratch test reaction should be a contraindication to the use of the drug. Regardless of the reaction by test, however, the physician should expect, and be prepared to treat, a systemic reaction with each injection of penicillin—or any other drug! Penicillinase (Nutra-pen®) is of no value in treating the acute penicillin reaction. Indications for the use of this enzyme are found in the delayed or serum-sickness type of reaction.

It would seem, therefore, that the prevention of an allergic emergency is dependent upon the caution and preparedness practiced by the physician. Prevention is always a good treatment! Information about a patient's known drug sensitivity—particularly to aspirin, penicillin or any other commonly used agent—should be displayed in a prominent manner on the patient's record. This information, then, will be the first item noted by the physician. Every drug, antigenic extract or other material used in the care and treatment of each patient should be respected, and thus suspected as a likely cause of allergic emergencies.

Specific therapy affords protection for the patient sensitive to the sting of the bee or the wasp. An emergency from this source seldom occurs in the vicinity of readily available treatment materials. These patients, with or without the protection of specific therapy, should be instructed to carry injectable or oral drugs (not a card providing information!)—epinephrine,* aminophyllin**—to be used until more complete and thorough measures can be instituted.

Allergic emergencies are encountered with a degree of frequency that places them high on the list of conditions which demand prompt, reliable and dependable measures of treatment. The materials used in the control of the allergic emergency should be on hand at all times.

---

* Ampins Epinephrine: Moore Kirk Laboratories.
** Isuprel-Franol: Winthrop Laboratories.

Dermatologists Compare Shaving Methods

Three Boston researchers reported results of their study of 101 shaves of 10 healthy men aged 20 to 50 years, using blades, safety razors and electric razors, in the December, 1963, issue of ARCHIVES OF DERMATOLOGY. Their findings indicated that electric shavers are less efficient than the older types of implements, but they found neither to be superior from a dermatologic point of view.

Drs. C. B. Viziam, Herbert Mescon and A. G. Matoltsy reported, "The cut edges of hair fragments were extremely ragged in the electric shavings as compared to the smoother edges of the blade shavings. Moreover, the hairs from electric shavings were ofttimes partially or completely vertically split. This was never observed with blade shavings." Immediately after electric shaving, they said, there was much greater variation observed in the lengths of protruding hairs, and in general, the electric shaver cut the hair less close to the skin surface.

All shavings, they found, removed skin fragments composed of as many as hundreds of cells and "resembled superficial biopsies."

Renal Agenesis and Bicornuate Uterus

Report of a Case With a Brief Review of the Literature

J. H. RANSOM, M.D.
Grinnell

THE FREQUENT ASSOCIATION of renal agenesis with uterine anomalies is well known. Because symptomatic cases are relatively rare, diagnostic delay is not uncommon, and most reported cases are still diagnosed only at operation. In the following symptomatic case, the diagnosis was established preoperatively.

CASE REPORT

B. K., a 12-year-old white girl, was admitted to Broadlawns Polk County Hospital, Des Moines, on August 31, 1962, two days after the onset of her first menstrual period. She complained of constant, incapacitating right-lower-quadrant pain that had commenced a few hours after her menses began. The patient had had no previous episodes of abdominal pain. There was no family history of menstrual difficulty or genital abnormality, and the menstrual flow was normal in character.

There was some right-lower-quadrant tenderness, but no muscle guarding. Rectal examination revealed an ill-defined right adnexal mass. One consultant felt that the mass was ovarian, and another later posed the possibility of a uterine anomaly.

She had a white cell count of 15,000/cu. mm., with a normal differential. After hydration with parenteral fluids, the patient had a white cell count within normal limits. Urine culture grew no organisms, and abdominal scout films were normal.

Intravenous fluids and analgesics were administered during the next four days. The mass in the right adnexal region had disappeared by that time, and the patient's pain and menstrual flow subsided together. She was discharged on her fifth hospital day to be followed as an outpatient. A definitive diagnosis had not been reached.

On October 16, the patient was readmitted to the hospital, 24 hours after the onset of her second menstrual period. Again, her entering complaints were abdominal pain that had started a few hours after the menses, and vomiting. A tender adnexal mass in the right lower quadrant was felt, and in addition, a non-tender ballotable left flank mass, thought to be an enlarged left kidney, was noted. The hemogram and urinalysis were again within normal limits. Urine culture was negative. An intravenous pyelogram showed an enlarged but otherwise normal left renal shadow, with good function, but there was no right renal shadow, and no function could be identified on that side after 90 minutes (Figure 1).

Under anesthesia, pelvic examination, uterosalpingography, and cystoscopy were performed. The patient had a single cervix, with the os opening near the left side. A uterine cavity was then visualized, and it was deflected to the left. Only the left tube appeared patent and normal (Figure 2). A separate uterine mass could be felt arising from the cervix on the right, but this was not visualized radiographically. Cystoscopy showed that the bladder had no right ureteral orifice.

On October 29, an exploratory laparotomy was performed.* Examination of the pelvis at that time revealed a bicornuate uterus. Both uterine bodies were equally developed, as were the tubes and ovaries. The two uterine bodies were completely separated except that they both arose from a common cervical mass. The right renal fossa was explored and found to be empty. The right uterine cavity was exposed and an hematometra was found. The old blood was evacuated, and a probe was passed distally, disclosing a blind pouch separated from the vagina by a thin membrane of cervix. With one member of the surgical team working from below and another from above, the cervical membrane was incised, and a polyethylene tube was sutured into place to keep the canal patent. The uterus was then closed and the operation terminated.

Several days after the operation, the polyethylene tube worked free and was removed. Subsequently the patient's menstrual functions have recommenced and are normal. For several months the new os was periodically dilated. The patient had no recurrence of her abdominal symptoms.

The author wishes to express his appreciation to Jack Spevak, M.D., chief of pediatrics, Broadlawns Polk County Hospital, for his aid in preparing this paper.

* By Drs. D. J. Ahrenholz, Clysta Richard, and Beverly Robinson.



Figure 1. IVP showing left renal outline and function, but none on the right side.

DISCUSSION

Incidence. Autopsy studies suggest that unilateral renal agenesis, as distinct from renal atrophy and hypoplasia, is a relatively rare condition that occurs in approximately one of 600 autopsies.[1, 2, 3] When it does occur in females, it is associated with a very high incidence of uterine anomaly. In Collins' series, 135 of 231 females with unilateral renal agenesis had various types of uterine malformations. Fortune found that 70 per cent of the females in his renal agenesis series had uterine anomalies.

In studies concerned with genital anomalies *per se*, the true incidence is somewhat harder to determine. McCall and Waugh state that one in 1,500 pregnant women has some sort of uterine anomaly.[4] Jarcho finds the reported incidence to be one per 15,000 obstetric cases, but says there are so many unrecognized cases that the true incidence must be something like one per 500.[5] Eismayer reported 40 cases of uterine anomaly, including 18 with renal agenesis.[6] Woolf and Allen recently reported 36 new cases, of which 15 showed combined genital and renal defects.[7] Thus, the incidence of uterine anomaly occurring with unilateral renal agenesis is about 1:1000 females. Symptomatic cases are much rarer.



Figure 2. The uterine cavity is outlined, and is deviated to the left. The medium is spilling into the abdominal cavity, demonstrating tubal patency.

Embryology. In early fetal life, the genital and renal anlagen develop in close proximity. The mesonephros appears after four weeks' gestation, and is the basis for the lower urinary tract. The adult kidney develops from metanephric tissue and connects with the ureter, which is of mesonephric origin. The mullerian apparatus, or early genital tract, appears at about the sixth week lateral to the mesonephros, and grows caudad parallel to it, eventually meeting a counterpart from the opposite side. It is this material which later forms the single uterus in the human being. Exactly how or when a defect in both systems occurs to cause an anomaly is unknown, but it may occur during this early stage of fetal differentiation.[5, 7]

Only in primates is there a complete fusion of the uterine portions of the mullerian apparatus. Carnivores and marsupials have greater degrees of duplication. However, in lower forms with double uteri, single kidneys are not found. Jarcho has written extensively on the comparative anatomy of the genital tract in females.

Symptoms. There are no symptoms "typical" of combined uterine-renal anomalies. Pain is the most frequent symptom noted in patients with hematometra.[8] However, it is possible for hematometra to exist with absolutely no pain. When symptoms occur, they are invariably due to the genital anomaly, so that the asymptomatic urinary tract is often neglected.[9] For this reason one must stress the importance of preoperative intravenous pyelograms in suspected cases.

Effect on Pregnancy. An important element in these cases is the effect of the anomalous uteri on fertility, pregnancy, and delivery. In Jarcho's 18 cases, six women were infertile, and four of nine pregnancies occurring in the other 12 patients were complicated. Schauffler has presented evidence

that fertility is unimpaired.[10] Wilson and Harris reported 36 women with anomalous uteri seen at the United Oxford Hospitals.[11] These women had a total of 117 pregnancies. Of these, 27.3 per cent resulted in abortion, and 9.5 per cent of the infants were stillborn. The incidence of malpresentation was 35 per cent, and of antepartum bleeding, 10.6 per cent. Fifteen per cent of the patients required cesarean section, as compared with a 5.8 per cent cesarean section incidence at that center. These discouraging figures may lead to surgery of sacrificial proportions if each patient is not studied in detail. Most of the cases having complications involve pregnancies in *rudimentary* horns. Few authors have had enough experience with the rarer, more complete separations in patients with well-developed double uteri. The only report which makes any attempt to correlate obstetric complications with a specific anomaly, for the purpose of coming to some conclusions on handling such cases, is that of Woolf and Allen. Their experience suggests that many if not most women in whom the separation of uterine horns is complete can be expected to deliver vaginally without difficulty. If difficulty is encountered during delivery, they recommend section relatively early.

CONCLUSIONS

Neither methods of diagnosis nor concepts of treatment of combined uterine-renal anomalies are standardized. There is enough material available, however, to support certain conclusions.

First, the discomfort in symptomatic cases may be due to hematometra, hematosalpinx, or hematocolpos. The symptoms are often vague or atypical, and can easily be mistaken for ectopic pregnancy, among other things. Methods commonly available allow preoperative diagnosis of this condition, provided the physician thinks of it. These methods include culdocentesis, intravenous pyelography, and uterosalpingography. If the pyelogram is done first and shows absence of one kidney, a uterine anomaly should be strongly considered as the cause of pelvic pain in symptomatic cases. One important reason for making the diagnosis before surgery is that more conservative procedures are done in those cases where the surgeon knows the diagnosis beforehand.[12]

Once the diagnosis is made in symptomatic cases, conservative surgery should be done. It consists of removing rudimentary horns, or fusing them to make a single, adequate uterine cavity. Other degrees of duplication of the uterine corpus require individualized solutions. In our case it was possible to establish a cervical opening in a closed but otherwise fully developed duplicate uterine cavity.

Prognosis in these cases may be said to include an increased incidence of breech delivery and cesarean section. The high incidence of abortion appears to be due to implantation in a rudimentary horn, and this incidence can be reduced by eliminating such sites without impairing fertility.

Decidual bleeding may occur from one uterus of one patient, though another maintains a normal, viable pregnancy, and this fact should be kept in mind when one is managing patients known to have or suspected of having a uterine anomaly.

SUMMARY

A case of bicornuate uterus associated with unilateral renal agenesis has been presented. The importance of intravenous pyelography and uterosalpingography in establishing the diagnosis has been emphasized. Conservative surgery to preserve fertility and minimize complications is suggested in symptomatic cases.

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Concepts in the Pathogenesis and Treatment of

Congestive Heart Failure

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Dr. Lewis E. January: The title of this panel discussion is not intended to imply that we have any earth-shaking new developments to report to you for treating heart failure. In the past year, as far as I am aware, no startlingly effective new drugs have been introduced for the treatment of heart failure, or any new operation. If there had been, you would already be informed. Communications today are fairly effective.

Why, then, should we bother to talk about heart failure? Simply to shuffle the papers over to the other side of the table? Well, not exactly, although I think that at times professors do this sort of thing. The reasons are several and important. Heart failure is a very common condition that never has been very well understood, but progress is being made. Those of us who struggled a number of years ago with osmotic pressure, hydrostatic pressure and rising venous pressure and thought we "had it made," know now that there is more to heart failure. Our purpose will be, rather informally, to try to tie together some of the presently understood facts which bear on pathogenesis and treatment, so that perhaps the things we do for these patients will seem more rational than they have previously, or even more irrational, perhaps, since the last word hasn't yet been spoken. I think we should be less than honest if we did not admit now that we have no substitutes for rest, sodium restriction, digitalis and diuretics.

There are at least two questions which must be kept foremost in mind. Normally the heart pumps a certain amount of blood at a certain pressure. What happens then, in a mechanical sort of way, which causes it to fail? Second, if we know what these mechanical defects are, can we then readily explain the disorders in the regulatory mechanisms otherwise which lead to the congestive state? I suppose that we might say that there is even a third puzzle. That is, do we really know what all of the regulatory mechanisms are?

To begin the discussion, I shall ask Dr. Eckstein to comment briefly on the mechanics of heart failure. After all, the central problem is with the heart. It is possible to overlook the fact that the heart is the core of the problem since the clinical manifestations are usually outside the heart.

THE MECHANICS OF HEART FAILURE

Dr. J. W. Eckstein: I would point out that the heart must pump enough blood to meet the metabolic requirements of the tissues. If one excludes changes in heart rate, there are two ways by which the heart may increase its output to meet the oxygen requirements of increased metabolic activity. It can fill to a greater extent, or it can contract or empty more completely from the same degree of filling. In heart failure, the myocardium loses its contractility, and an adequate output is maintained by virtue of greater filling. Increased filling is achieved by an increased filling pressure which is secondary to vascular congestion resulting from increased blood volume. If more blood is packed into the venous system, venous pressure goes up, the filling of the right heart increases, diastolic fiber length is greater, and output is maintained. The heart, in effect, is forced to maintain output by virtue of the increased filling pressure. This increased pressure leads to engorged vessels, edema, ascites and the signs which we recognize as those of right heart failure.

In left ventricular failure—the vascular congestion which increases filling of the left ventricle—is manifested by engorgement of the pulmonary circulation, so that the blood vessels of the lungs are distended sufficiently to encroach upon the alveolar spaces. As a result, the patient's vital capacity is reduced, he becomes short of breath, and he has to breathe more air in order to ventilate enough to oxygenate his blood. If the pressure in the lungs increases sufficiently, there can be fil-

This panel discussion took place during the Refresher Course for GP's cosponsored by the SUI College of Medicine and the Iowa Chapter of the American Academy of General Practice, in Iowa City last February.

tration into the alveolar capillary membrane, and there can be edema of the membrane and difficulty in the diffusion of gases into the blood. Because of this congestion and engorgement, there can be frank pulmonary edema with rales and frothy sputum.

So heart failure really is not a reduced cardiac output, but rather is a situation in which an adequate output is maintained only at the expense of sufficient vascular congestion to cause signs and symptoms.

Dr. W. M. Kirkendall: For many years we've talked about forward and backward failure, and high-output and low-output cardiac failure. How do these fit into your scheme?

Dr. Eckstein: I think that high-output failure is simply a situation in which the metabolic requirements of the tissues are very high, as might be the case in beri-beri or thyrotoxicosis. Arteriovenous fistula is a hemodynamic set-up which would be analogous to this. The output of the heart is high, and the heart fails in the presence of a high output. The venous pressure and blood volume increase, but the congestion takes place in the presence of a high output. Low-output failure is the sort of thing that I described earlier. It is the failure that comes on while the cardiac output is within what we might call the normal range. It occurs in arteriosclerosis, hypertension and the congenital and rheumatic forms of heart disease.

Backward failure and *forward failure* are terms which perhaps we shouldn't use any more. Forward failure was at one time described as an inadequate cardiac output. Inadequacy of cardiac output means failure of perfusion of the tissues with blood, but congestive heart failure, as I have described it, implies a normal cardiac output—at least a cardiac output adequate to meet metabolic needs, over a period of time. True, it may be reduced, relative to the needs, during exercise, but the oxygen debt is paid back when the exercise subsides. Forward failure or failure of perfusion really is shock, and this can occur in the presence of a normal myocardium and in the absence of vascular congestion. If there is hemorrhage, enough blood may be taken away from the body so that the heart cannot fill adequately. Output would be inadequate under such circumstances, and filling pressure would be low. I prefer to think of this as shock, rather than as forward failure. *Backward failure* refers to congestive failure as I have described it. The term was used because it was thought that the heart couldn't pump out the blood which was delivered to it.

Dr. January: The alterations in salt and water metabolism, Dr. Kirkendall, dominate the clinical picture of the congestive state. Will you tell us something about the regulating mechanisms and what happens to them in heart failure?

THE ROLE OF KIDNEY DISEASE

Dr. Kirkendall: Certainly in heart failure, the retention of salt and water normally excreted by the kidney is an outstanding characteristic. Therefore, this condition is kidney failure just as much as it is heart failure. Of course, kidney failure can cause a symptom complex in the circulation which looks a great deal like primary congestive heart failure. Yet I don't want to leave with you the impression that I think congestive heart failure is due primarily to kidney disease. Though many investigators have tried to implicate the kidneys primarily, they have been unsuccessful.

The three important changes which we can measure in persons with congestive heart failure are: an increase in venous pressure; a sharp reduction in sodium excretion, often accompanied by an increase in aldosterone excretion; and finally a change in renal hemodynamics. The increase in venous pressure undoubtedly is responsible for a large transfer of fluid into the tissues and for prerenal sequestration of sodium. Perhaps because of this—or at least associated with it in many patients and in most animal preparations where congestive heart failure has been produced—aldosterone increases. In the animal preparation, aldosterone production parallels venous pressure. Such a relationship must not hold true in humans, for many patients with congestive failure are normal as to both production and excretion of aldosterone.

In the patient with congestive heart failure, there are other possibilities that might cause the increased production of aldosterone. It has been shown, for instance, that aldosterone can be produced if there is a deficient volume of blood or if there is deficient pressure in some parts of the circulation. Most of the studies of this phenomenon have been made on the arterial side of the circulation. Two areas where these hemodynamic changes have been known to provoke aldosterone production are the cerebral and renal circuits. In most of these experimental situations, the hypophyseal-pituitary axis must be intact if aldosterone is to be produced. This has promoted the concept that a trophic hormone from the anterior pituitary is responsible for the increased secretion of aldosterone following changes in pressure and volume in the circulation.

Aldosterone may be produced from changes in the renal circuit without the participation of the central nervous system or the pituitary gland. Renin acts on a plasma substrate to form first angiotensin I, a decapeptide which is then reduced to an octapeptide, angiotensin II. This hormone directly stimulates the adrenal cortex to increase the production of aldosterone.

Regardless of the manner in which aldosterone is produced, when it is present, it increases the avidity with which the kidney reabsorbs sodium.

Since water will remain in the body with the extra sodium, the edema that is produced initially by high venous pressure is augmented by salt and water retained by this mechanism.

Renal blood flow is practically always reduced in patients with congestive heart failure. The reduction in renal blood flow is greater, percentagewise, than the reduction in cardiac output. Although initially the glomerular filtration rate may be maintained, it too is eventually reduced if failure progresses. As a final alteration in the hemodynamic picture of the renal circulation, there is a great increase in renal venous pressure which parallels the right atrial pressure increase.

It is not difficult to imagine that an increase in renal venous pressure, along with consequent edema of the kidney, might result in poor function of that organ. In addition, when renal blood flow is decreased and the glomerulus filters a proportionately greater percentage of the flow through the kidney, this imbalance leads to a greater reabsorption of sodium and water than is normally seen. It is likely that an increase in the gradient of pressure between tubular and vascular areas leads to this change in sodium excretion. Thus, each event promotes salt and water retention. It should be mentioned here that there may be significant increases in venous pressure before severe cardiac edema occurs, and we know that the hemodynamic changes of congestive failure may occur long before an increase in venous pressure is seen. Finally, the changes in the renal hemodynamics may persist long after the patient is out of congestive failure and when the cardiac output is normal.

These observations make it clear that even though these mechanisms may be very important in the development and maintenance of the edema of congestive heart failure, their exact significance is not understood. It is likely that initially the renal changes are prompted by the low cardiac output and the increased systemic venous pressure. Paralleling cardiac output, in a rough way, renal blood flow is reduced to an even greater degree as the state progresses. Glomerular filtration rate falls, and eventually aldosterone production is increased to help the patient maintain his circulating blood volume. At any rate, it is reasonably clear that these are the chief renal mechanisms which are observed in the edematous state and which we ordinarily associate with chronic congestive heart failure.

Dr. January: Are there any questions, Dr. Eckstein, that you would like to ask of Dr. Kirkendall? Are there any inconsistencies?

Dr. Eckstein: As I described heart failure, I described a state in which adequate cardiac output would be maintained. Because of congestion, the heart is driven by an increased filling pressure to put out an adequate amount of blood. We would say that the failing heart is unable to increase its contractility or its level of function. Its reserve is diminished. When we treat heart failure with digitalis or any of the other things which ameliorate heart failure, we must assume that we are doing something to make myocardial function better.

Do you think that diuretics, which we use, can improve myocardial contractility and move the ventricle to a higher level of function?

Dr. Kirkendall: There is no question that low-salt diets and diuretics will control heart failure in many patients. This is a fact on which we do not need to dwell. To expand on this point and perhaps answer your question, I think it most interesting that patients in congestive heart failure may have a spontaneous diuresis of fluid after sodium has been removed by a diuretic agent, by extracorporeal dialysis, by peritoneal dialysis or even by an exchange resin. Thus, the total water and salt loss after such treatments have been employed is often far in excess of the amount actually removed by the procedure. I suspect that the reason for this diuresis is that when the patient loses the initial weight, he decreases the amount of work his heart must do. Perhaps in some way, this improves his myocardial metabolism, and the contractility of the heart. There are other explanations for this phenomenon, of course. For instance, the acidosis that occurs following administration of exchange resins, via the gastrointestinal tract, may serve as a diuretic.

DIGITALIS

Dr. January: Dr. Theilen, digitalis has been used for about 175 years. Will you comment on the role of digitalis in the treatment of heart failure, and tell us what you think are the indications, or contraindications if there are any, for its use in heart failure?

Dr. E. O. Theilen: There is little doubt about the preeminent place of digitalis in treating most patients with congestive heart failure. With few exceptions, heart failure appears primarily because contractility of the heart muscle has been impaired so that cardiac output is inadequate to meet the needs of the body. Because diuretics and salt restriction do not affect the function of the myocardium directly, as does digitalis, they therefore should be considered only as adjunctive treatment. With few exceptions, digitalization is the proper initial treatment for a patient in congestive heart failure. I am opposed to "therapeutic broadsides" in treating congestive heart failure, particularly when the failure has been of long duration and the patient is not critically ill. Digitalization alone will often suffice, particularly if the patient is in congestive failure for the first time. Over-zealous treatment with diuretics and severe salt restriction, in addition to digitalization, may

actually be detrimental to the patient, and should be held in reserve until they are needed.

Occasionally a patient may be short of breath and yet have few physical signs such as an elevated venous pressure. It may be difficult to decide whether the shortness of breath is due to heart failure or perhaps to lung disease. I would not use digitalis empirically in such a patient without carefully evaluating his heart size. If the heart is normal in size on physical exam and radiography, it is doubtful that the shortness of breath is due to congestive failure, and digitalis cannot be expected to be of much help.

The primary reason for giving digitalis is to increase myocardial contractility. Certain arrhythmias are also an indication for digitalis, since in themselves they can lead to congestive failure as a consequence of impaired efficiency of the heart. Rapid atrial fibrillation is a good example. Keep in mind, however, that cardiac slowing following digitalization is not entirely the result of a direct effect of the drug on the pacemaker tissue in sinus tachycardia or in atrial fibrillation when congestive failure is present. A slowing of the rate of discharge of the S-A node in sinus tachycardia and a decrease in transmission of impulses through the A-V node in atrial fibrillation, in this situation, result in part from reflex vagal influences secondary to improved contractility and recompensation of the muscle.

Digitalis may not always be effective in what appears to be congestive failure associated with certain clinical entities. One example is the patient with complete A-V heart block who has a slow idioventricular rhythm which makes him unable to compensate for increased physical activity by means of an increased cardiac output. If his myocardium is fairly normal, contractility of the muscle will not be impaired. The increased venous pressure and edema are a consequence of a reduced cardiac output, and digitalis will not be effective in this situation.

Another example is the patient with constrictive pericarditis not associated with dilatation of the ventricles. His problem is mechanical and is the result of limited ventricular filling rather than of impaired contractility.

Other examples include patients with "high-output failure" secondary to severe anemia or to thyrotoxicosis. The cardiac output of a severely anemic patient might prevent the supply of enough oxygen to the tissues because of the low hemoglobin and low oxygen-carrying capacity of the blood, even though the heart muscle itself is normal. Signs of congestive failure may also develop in a thyrotoxic patient with a normal heart because of the inability of his heart to meet the excessive demands made upon it by hypermetabolism. A relatively inadequate output results, even though the heart is working at its maximum capacity and despite the fact that the absolute values for cardiac output are higher than normal.

These considerations, of course, do not hold in the thyrotoxic patient who also has heart disease or who has rapid atrial fibrillation.

Dr. January: Dr. Theilen, once in awhile, or perhaps oftener than that, elderly patients who are subjected to the stress of surgery do go into cardiac failure. Do you recommend prophylactic digitalization of these patients?

Dr. Theilen: I'll say "No," and then turn right around and admit that I sometimes do it. This is often a difficult decision. By and large, I don't believe in prophylactic digitalization. Many patients who are in borderline compensation do go through surgical procedures without difficulty. I approach the problem in this way. If the patient has obvious cardiac disease and has cardiac enlargement and some symptoms of an impaired cardiac reserve, I should be inclined to digitalize. But by and large, I don't think that prophylactic digitalization is indicated.

Dr. January: I don't know how the rest of you feel, but I certainly agree, for unless certain standards are adopted for its use, the therapy becomes completely irrational, and digitalis is one of the most valuable drugs that we have. To play hunches is completely irrational. That is precisely the state of affairs which exists when one uses digitalis in a pregnant woman, in advance of delivery, or in a patient in advance of surgery when there are no symptoms of cardiac failure. This is particularly wrong if the heart size is normal.

Dr. Theilen: Once you digitalize a patient, you are more or less committed to long-term therapy, and I think that this is reason enough for considering the matter carefully before you undertake it.

Dr. January: Dr. Theilen certainly implied that he regards digitalis as the drug of first choice in treating the patient with cardiac failure. Dr. Kirkendall, do you agree, and also do you routinely advise salt restriction and do you routinely use diuretics?

SODIUM REGULATION AND THE USE OF DIURETICS

Dr. Kirkendall: I will agree with Doctor Theilen's statements—particularly those in regard to the general management of patients with congestive heart failure. I am a member of the group who believe that measures for the correction of heart failure should first be directed to the heart. I certainly don't advise diuretic therapy before digitalization.

I do believe that along with the digitalization, patients with congestive heart failure should have sodium regulation, let us say, rather than restriction. For weeks after heart failure, the patient is unable to excrete a sodium load normally, and water excretion lags far behind that seen in the healthy state. Such a patient does very poorly if

on one day he gets eight grams of salt and the next day 12, 16 or 24 grams. It is my observation that patients who have had congestive heart failure do better if they are on a standard sodium intake, and I prefer it to be a low one. I usually suggest that they eat a 4 Gm. sodium-chloride diet, primarily to regulate their salt intake within what I consider a reasonable limit. Many patients do well on this program of digitalization and salt retention, and it is for this reason that I do not use diuretics continually.

Dr. January: There is a wide choice of diuretics today. Which ones do you advise, and do you ever use more than one at a time?

Dr. Kirkendall: I believe that the thiazide diuretics are by far the most valuable ones for the treatment of patients with congestive failure. They are by far the most effective oral diuretics, they are inexpensive, and one can give them with safety over prolonged periods. In many respects they are almost ideal diuretic agents, and they certainly meet the needs of many patients with congestive heart failure.

If a patient becomes refractory to a regimen consisting of digitalis, modest sodium restriction and a thiazide diuretic, I usually consider the possibility that he has either a derangement of electrolytes or a new complication, and I look for these before I add another diuretic to the program. I think this is a stage at which one must be very alert to the possibility that something has gone awry. Has the patient had a new myocardial infarction? Has there been a pulmonary embolus? Or finally, is the patient so irresponsible that he has disregarded my instructions, once he has left my office?

Seldom can we increase the response to the thiazides by increasing the dose over the standard one usually employed. Practically, the maximal amount of sodium that the thiazides can eliminate will be excreted after a dose equivalent to one to two grams of chlorothiazide daily. In other words, the dose-response curve flattens out very quickly, and when large amounts of chlorothiazide—for instance two to four grams per day—are given, the amount of sodium lost in the urine falls off, production of aldosterone is stimulated, and great quantities of potassium are excreted in the urine. Although it is likely that mercurial diuretics work on some part of the same transport system, as do the thiazides, occasionally an additive effect is seen when a thiazide and a mercurial are used together.

Other diuretic agents act on other parts of the nephron. It is frequently quite logical to use two or more diuretics with different modes of action to cause an enhanced loss of sodium. For instance, aldosterone production is usually quite high in the patient with cirrhosis of the liver with edema. In such patients, a most effective program for sodium removal consists of an aldosterone blocking agent, an adrenal cortical steroid to increase the glomerular filtration rate and a diuretic which acts on transport systems for sodium, such as a thiazide or a mercurial.

If one can increase the glomerular filtration rate with an acidifying substance such as ammonium chloride, he may make the thiazides more effective. In addition, if we can alter the pH of the urine towards the acid side with an acidifying agent, we not only increase the glomerular filtration rate but also enhance the effect of the mercurial diuretics, which work better in an acid environment. The zanthines also increase glomerular filtration rates slightly, and have an effect on sodium reabsorption in the kidney as well. Water alone may increase the glomerular filtration rate, but I believe all of you are aware that when one forces water on the patient with inadequate renal function, he may easily and rapidly produce water intoxication.

STEROIDS, SPIRONOLACTONES AND HEPARIN

As I mentioned, the steroids may increase the glomerular filtration rate and help at times to clear resistant edemas.

Another group of diuretics which work differently are the spironolactones and heparin. The spironolactones as we have mentioned, competitively inhibit the effect of aldosterone on the kidney and by this mechanism allow sodium to be released and potassium to be retained from the tubular urine. Heparin prevents or certainly inhibits the formation of aldosterone in the zona glomerulosa of the adrenal cortex. Thus, in patients with edema in whom aldosterone production is important, the use of heparin may cause a significant diuresis.

Dr. January: You placed the spironolactones far down on the list. They are inordinately expensive. Do you use them very often?

Dr. Kirkendall: Spironolactones are not beneficial in some patients with congestive failure. Such findings support the point of view that in this group aldosterone excess is not an important part of the sodium retention problem. In patients with far advanced congestive heart failure, however, aldosterone is likely to be increased. Certainly the spironolactones should be used in patients with severe edema before they are said to be hopelessly ill.

Dr. January: You recommend that they be reserved for patients in refractory failure, and when the other agents seem to have failed?

Dr. Kirkendall: Yes, but I suggest their use in one other group of patients, namely those who have large renal losses of potassium and who cannot be controlled by the administration of oral potassium. By inhibiting the renal excretion of potassium and enhancing the excretion of sodium,

spironolactones can keep these patients in much better condition.

I don't mean to imply that the spironolactones aren't good drugs. They would be used much the more frequently if they were cheaper.

DIGITALIS INTOXICATION

Dr. January: I should like to comment very briefly on digitalis preparations. As you know, whole-leaf digitalis is not very often used today, though it is an excellent drug, and I think the reason is that it is not predictably absorbed from the gastrointestinal tract. On the other hand, there are a number of glycosides, and digitoxin is the one with a long action. It is an excellent drug when used properly in a supervised patient. If you are committed to using digitalis for a long period in a given patient, I think that this drug has a great deal to recommend it.

There are a number of shorter or intermediate-acting digitalis glycosides, most particularly digoxin or Lanoxin and Gitaligin. The manufacturers have attemped to convince us that there are some significant differences in tolerance and effect among these drugs. Actually, I don't think that these claims have been very well substantiated.

Dr. Theilen, I think you would agree that digitalis intoxication today, as we see it at University Hospitals, is a serious and a constantly recurring problem. Evidently the reason is the use of the potent diuretics and the interrelationship of digitalis and potassium. Do you recommend potassium supplements for all digitalized patients who are receiving a diuretic drug?

Dr. Theilen: No, I don't think that is necessary. Again, it depends on the situation. I am more inclined to use a potassium supplement if a patient is on a thiazide diuretic than to do so in other instances. The big problem, however, is posed by the patient who has been on digitalis and develops symptoms of toxicity. Should one then use potassium? Various recent articles have stated that potassium is the treatment of choice for all arrhythmias associated with digitalis intoxication. Like so many other generalizations, this simply is not true. Potassium is a non-specific agent, as far as combatting the effects of digitalis is concerned. Potassium is a depressant, and it works very well when the manifestations of digitalis toxicity are those of rapid ectopic impulse formation such as paroxysmal atrial tachycardia. But if the patient has advanced A-V heart block from digitalis, potassium may very well worsen the situation and be hazardous.

POTASSIUM PREPARATIONS

Dr. January: What potassium preparations do you advise, Dr. Kirkendall, and in what doses?

Dr. Kirkendall: Ordinarily with thiazide diuretics it doesn't make any difference whether you use acidifying or an alkaline salt of potassium, for the thiazide is usually effective in either circumstance. Potassium Triplex, Kaon, and any other of the commercially available or easily prepared potassium mixtures are palatable solutions, and I think they are adequate to supplement persons losing excess potassium.

The dosage of potassium is important. Most patients who required potassium supplementation lose over 40-60 mEq/L. of potassium daily, and this, in the case of the commercial preparation potassium Triplex, means that the patient must receive at least four teaspoonsful of the preparation per day. If the patients are refractory to diuretic agents, very large quantities of potassium may be lost in the urine. We have measured urinary excretions of as much as 120 mEq of potassium per 24 hours in patients on complex diuretic programs.

There is good reason for using acidifying potassium preparations if one is using mercurial diuretics. The mercurials are more effective diuretics in an acid environment.

I hasten to add that there is nothing wrong with potassium-chloride tablets if they are fresh. Every now and again we see potassium tablets going through as concretions in the stool, and we can usually relate such effects to the patient's taking old potassium-chloride pills for supplementation. Thus one should be sure that the patient has a supply of fresh tablets.

QUESTIONS AND ANSWERS

Dr. January: Are there any questions from the audience?

Question: Do you ever administer digitalis parenterally?

Dr. Theilen: I think this depends upon the urgency of the situation. If the patient is acutely ill, there certainly is no objection to the use of a preparation parenterally. If the patient has been in congestive heart failure for weeks or months, as is frequently the case, and is not critically ill, then I think one should go slowly.

I should like to mention a concept which I think is very important in digitalization. Dr. DeGowin has emphasized that excretion rates of drugs influence cumulative effects when daily doses are given. The excretion of a single dose of digitalis follows an exponential curve over days or weeks, depending upon the preparation. For this reason, a small dose of digitalis given daily will lead to gradual accumulation, until a constant level is reached. A large initial digitalizing dose is eventually excreted in the same way and over approximately the same length of time as a small dose would be. The only reason for using an initial digitalizing dose is to reach a therapeutic level more quickly than by waiting for the cumulative effect of daily maintenance doses. The hazard in giving an initial loading dose of any digitalis preparation is the possibility of overshooting the desired therapeutic level during the first few days, and making the patient toxic.

Dr. January: I think there's one other aspect of this problem that is worth considering. Many physicians use digitalis parenterally. I would suggest that the same preparation be used parenterally, if possible, that is to be used orally at a later time. For example, if you use digitoxin parenterally, which is a long-acting drug, and some days later change to oral administration of one of the short-acting drugs, you are confronted with a conversion problem. If parenteral preparations are to be used because the situation is sufficiently urgent, I would suggest that you stick with digoxin—Lanoxin. It can be used parenterally in about the same dosage as Cedilanid, the old standby. It becomes effective and it is excreted in about the same length of time. If you remember this, and remember also that the digitalizing parenteral dose of Lanoxin is anywhere from 1 to 2 mg., and the oral dose is anywhere from 1.5 to 3.0 mg., you can switch over to the maintenance dose much more easily.

Question: If the patient can't take digitalis, is there a substitute that we can give him?

Dr. January: I have seen very few such patients. So far as I know, there is no substitute. All of the other drugs have digitalis-like effects, and if the patient can't take digitalis, it is likely that he can't take them either.

The problem more often is the patient who has been overdigitalized or has a potassium deficit, and has trouble with digitalis on that score.

Question: What do you think about using Strophanthin or Ouabaine when the patient cannot tolerate other digitalis preparations or is in refractory failure?

Dr. January: As far as I know, you will have the same difficulties with these drugs that you have with other digitalis preparations.

Dr. Theilen: I am of the same opinion that these drugs are not superior to other glycosides in treating refractory cardiac failure. There comes a time in the course of congestive failure when the therapeutic dose of digitalis very closely approximates the toxic dose, and this is sometimes a very real problem. It is sometimes necessary to decrease the dose of digitalis rather than to increase it when a patient's failure worsens. Sometimes by decreasing the digitalis one can actually get the patient to recompensate a little more.

Dr. January: Strophanthin and Ouabaine are very difficult to use because the dosages are so small and they are such powerful agents.

Preschool Child Needs Help in Adjusting To the Death of a Sibling

A preschool child needs his parents' help in adjusting to the death of a brother or sister, if he is not to incur serious emotional difficulties, according to statements by Donald L. Weston, Ph.D., a psychologist, and Robert C. Irwin, M.D., a pediatrician, both of Baltimore, in the December, 1963, issue of AMERICAN JOURNAL OF DISEASES OF CHILDREN. The first thing the child wants to know is what happened, and he should be given a realistic answer. He can understand that his brother or sister was too sick to get well, or had suffered irreparable injuries.

"The parents' ability to verbalize the loss informs the child that this event is not so overwhelming that mention of it must be avoided," the authors said. "The statement that the sibling, by name, has died and will not be coming, or returning, to the home should not be avoided. The fact that the death represents a failure in the physical ability of the child is important in the explanation of death."

The question of why the sibling died is probably more difficult for the child, but it need not be frightening for the child that his parents cannot explain it. The lack of an explanation can become part of the reality of the event.

Religious explanations are probably inadequate from the preschool child's point of view, they believe.

Telling a child about a fatal illness or an accidental death raises his concern about the possibility of such a thing happening to him, and the parents should take pains to reassure him regarding his own health.

The surviving youngster may have guilt feelings that need to be allayed. Some rivalry is a part of every sibling relationship; and especially when the arrival of a new baby has diverted some of the attention to which the older child has become accustomed, the survivor may feel some responsibility for the death. The preschool child, the authors explain, is in a stage of development when the line between feeling and causing events is confused. Thus the child may feel guilty, or even may expect punishment for having caused the death. For these reasons, the survivor should be reassured that nothing he did or *thought* could have caused his brother or sister to die.

Another possibility against which parents must be warned, in such a situation, is that in an effort to protect their remaining child or to relieve their grief, they may "spoil" him. To some extent, the authors say, overattentiveness may buttress the survivor's guilt over his sibling's death, though that of course would not be the only harm he would suffer.

"Through parental understanding of the meaning of this event for the child, the experience can be kept from becoming the focus of later emotional difficulties," they contend.

State University of Iowa
College of Medicine

Clinical Pathologic Conference

CLINICAL SUMMARY

A 61-YEAR-OLD WHITE MALE laborer was admitted to the University Hospitals 18 hours after being injured in a fall. Apparently he had stumbled while intoxicated, and had struck his face against a kitchen stove. Since the accident the patient had been unable to move his arms and legs. His physician reported that he was areflexic on initial examination, and that indwelling urethral catheterization had been necessary.

Past history revealed that the patient had an alcoholic background. He had been hospitalized 20 months previously for treatment of a right trimalleolar ankle fracture sustained in a fall. The fracture had been treated by open reduction and internal fixation. The patient's postoperative course had been unremarkable, and good healing of the ankle was obtained. Routine urinalysis and blood count had been normal at that time. Following convalescence from the injury the patient had returned to full-time work.

Physical examination on the present admission revealed a blood pressure of 110/75 mm. Hg. The pulse was 96/min.; the body temperature was 101.4° F. (rectally). There was a contusion noted over the forehead, and a small laceration over the bridge of the nose. The patient was otherwise normocephalic. The neck was tender to palpation over the lower cervical spines posteriorly. The chest was clear to auscultation and percussion. A regular cardiac rhythm was present, and no murmurs were audible. Examination of the abdomen failed to reveal visceromegaly, guarding, or masses. The bowel sounds were felt to be hypoactive. The extremities were warm and dry. There was a large vesicle present over the right lateral malleolus. The patient's sensorium was clear, and he was alert, oriented, and fluent. The cranial nerves were intact, and the pupils were 3/3 mm. and reacted normally to light. Intercostal muscle activity was absent. The patient was unable to move his extremities except for slight biceps and deltoid activity bilaterally. Pin, touch, and position perception had been lost below the C5 level bilaterally. "Mass withdrawal" responses were described upon stimulation of the lower extremities. Deep tendon reflexes showed: biceps trace/trace; triceps 1+/1+; patellar 3+/3+; and Achilles 3+/3+. Plantar stimulation yielded bilateral withdrawal extensor responses. Superficial, abdominal, and cremasteric reflexes were absent. Roentgenograms of the skull, cervical spine and chest were interpreted as "negative." The hemoglobin level was 14.2 Gm./100 ml., the hematocrit was 47 per cent, and the white blood cell count was 18,500/cu. mm. Urinalysis revealed a trace of albumin, and three to five white blood cells and six to 10 red blood cells per high power field.

Skeletal traction by means of Crutchfield skull tongs was instituted soon after admission, and 15 pounds' pull in an axial direction was established. A lumbar puncture was performed, and revealed an opening pressure of 130 mm. H_2O. A free rise and fall during respiration was noted, but on bilateral jugular compression, a slow rise to 160 mm. of fluid was recorded. The fluid obtained was clear and colorless.

The day following admission, myelography was performed, and the contrast oil was run up to the C3 level. A partial-to-complete block was suggested by these studies. Following this study, a cervical laminectomy was performed, and the dorsal arches of C4, C5, C6, and most of C7 were removed. The dura was opened, and the spinal cord was decompressed. Following the laminectomy, the neurologic status had changed but little.

The lower extremities were kept in a flexed position most of the time. Because of respiratory difficulties, tracheostomy was performed on the first postoperative day. The following day (the fourth following his injury), the patient was confused and febrile. His hemoglobin level was 12.9 Gm./100 ml. A tracheal toilet aspirated large amounts of bronchial secretions. Penicillin, streptomycin, and gantrisin were ordered in the usual doses.

The patient's course remained febrile but stable until two days later, when there was a sudden drop in blood pressure to 80/40 mm., and a rise in pulse to 120/min. was noted. The rectal temperature was 103.4° F. Intravenous fluids and antibiotics were continued. However, a large, tarry stool was passed, and a repeat hemoglobin level

was 9 Gm. per cent. No hematemesis was recorded. The patient was given 1,200 ml. of whole blood by transfusion, and there was a subsequent rise in blood pressure to 108/60 mm. Hg. The patient passed two more tarry stools during the night, and expired suddenly the following morning while vital signs were being recorded.

CLINICAL DISCUSSION

Dr. S. E. Ziffren, Surgery: Miss Drees will represent the students.

Miss Donna Drees, Junior Ward Clerk: This patient was areflexic immediately following his injury. The absence of intercostal muscle activity suggested loss of motor activity in the thoracic region, and placed the lesion in the cervical portion of the cord. A partial or slight biceps and deltoid activity bilaterally suggested that some fibers in the C5-C6 area remained functional. The mass withdrawal symptoms that were described were consistent with the findings in spinal shock following trauma to the cord. There was hypoactivity of the reflexes in the upper extremity consistent with spinal shock. The elevated white blood cell count was consistent with a kidney infection subsequent to urinary stasis following spinal shock and the presence of an indwelling catheter. Infection is a frequent consequence of spinal injury, being due to bladder atonia and the presence of infection-susceptible decubitus blisters and ulcers over bony prominences.

At the time of admission, the patient's opening lumbar pressure was 130 mm. H_2O, and the elevation to 160 mm. upon bilateral jugular compression suggested no obstruction in the spinal canal. Postulated causes of the failure of the radiopaque fluid to ascend above the C3 level at the time of myelography are (1) a physiologic block due to edema of the cord obstructing the passageway or (2) a narrowed channel permitting spinal-fluid passage, but restricting flow of the heavier radiopaque material, or (3) development of an epidural hematoma compressing the cord and obstructing the passage of fluids.

A cervical laminectomy and spinal cord decompression changed the patient's neurologic status but little. Respiratory difficulties in conjunction with the loss of intercostal muscle activity aided the accumulation of bronchial secretions in the lungs.

A sudden drop in blood pressure to 80/40 mm. Hg, a rise of the pulse to 120/min., and a drop in the hemoglobin level were due, we believe, to gastrointestinal bleeding from stress or from Cushing ulcers. We believe the immediate cause of death in this patient was gastrointestinal bleeding and a generally debilitated condition, both of which, we think, were consequences of a spinal-cord injury.

The spinal-cord lesion is characterized by (1) interruption of the posterior columns of the cord at the C5-6 level, (2) interruption of the corticospinal tract at C5-6, (3) a loss of spinothalamic tracts, (4) some spinal cord activity in the upper extremities, and (5) intact spinal cord reflexes in the lower extremities. In view of this, we postulate the spinal cord lesions to be in the C5-C6 area. Our differential as to the type of lesion includes contusion, in view of the fact that a blow could produce hemorrhage and swelling within the substance of the cord, the neurologic manifestations depending upon the severity of the injury. Laceration or transection of the cord is another possibility, as is compression of the cord. We concluded that the patient had sustained a crushing injury resulting in hemorrhage within the cord at the C5-C6 level. One of the vertebrae may have overridden another and then realigned itself, or a herniated disc may subsequently have resumed its normal location without leaving radiologic evidence of injury.

Dr. Ziffren: Dr. Van Allen will discuss the protocol for the staff.

Dr. Maurice W. Van Allen, Neurology: I shall begin by going through the protocol to analyze some of the signs and symptoms. First we note the patient's age, 61, at which time there is a poor prognosis for survival after spinal-cord injury. The patient was an alcoholic, and thus was vulnerable to trauma, prone to liver malfunction and inadequate reaction to stress.

The patient suffered quadriplegia immediately following injury, and was admitted here 18 hours later. He was alert and fluent, and his airway was clear. His brain presumably had not been injured. Let us consider the localization of the lesion and its anatomic implications. The C5 dermatome supplies the outer aspect of the arm and forearm. The correspondence of the cord segment to the vertebral level is very close in the cervical region —perhaps one-half vertebra removed. Our patient's lesion was presumably in the area of the C5 vertebra.

In a spinal injury, the cord itself may be interrupted either partially or completely. The anterior horn cells will be injured in the same region, and perhaps for a segment or two above and below. Always, in a transverse cord compression, both lower and upper neuron deficits are seen. The roots may be torn or compressed as well, and the vascular supply to the neural tissue, either venous or arterial, may be compromised. It is surprising that the vertebral arteries are not more often damaged in fractures of the cervical spine. Perhaps the patient does not survive when such an injury is substantial.

It is interesting to note that our patient presented what is frequently seen in cervical spine and cord injury. Such traumatic lesions are often found at the C5-C6 or C6-C7 levels. There is quad-

riplegia below, with a flexion posture of the arms and little or no movement in the hands. The biceps receives a substantial innervation from the C5 dermatome and thus will contract, as will the deltoid. The triceps innervation is from C6 and below, and this muscle is usually paralyzed. The biceps reflex may be preserved, though the triceps reflex is absent. Sensation will be preserved in the lateral aspects of the arm. Intercostal movement is not seen, but diaphragmatic breathing obviously was present. This, again, is the common picture. We do not see spinal-cord transections which are presumed to be at the C4 level or above, because diaphragmatic movement is lost. Rather unusual features in this case were the very early development of reflexes in the lower extremities and the mass withdrawal responses.

I would not give the elevated white blood cell count much significance here. It often is elevated in trauma. The blood pressure of 110/75 mm. Hg is in normal range, but I suspect that this level was below the patient's usual pressure. The pulse rate was elevated and is of no particular significance. The temperature was elevated. The skin was warm and dry. All this information is evidence of the fact that the patient was sympathectomized as a result of the interruption of descending tracts in the spinal cord. Therefore he was very vulnerable to external temperature changes, and his temperature would tend to vary with room temperature, and might rise to dangerous levels with infection because of a lack of regulatory mechanisms. Such a patient will not sweat in response to bodily attempts at heat regulation. Though it was not noted here, he almost certainly had a bilateral Horner's syndrome.

"Spinal shock" refers to that state of flaccid paralysis and areflexia that is seen below an acute spinal cord transection. This state lasts a very few minutes in the frog, and persists longer as one goes higher in the phylogenetic scale. To say how long it lasts in man is difficult. One usually thinks in terms of several weeks if the patient is maintained in a satisfactory physical condition. "Spinal shock" has no direct reference to the blood pressure level, though the blood pressure is often reduced during the first few days following trauma. The mechanism of spinal shock has not been elucidated.

Work recently done here by Barnes, Joynt, and Schottelius is of interest. They put electrodes into the anterior horn cells of the spinal cord of the cat, and blocked conduction in the cord above by application of cold. The motor neurones in the lumbar region became hyperpolarized, and thus less easily discharged. This response suggests that influences from above facilitate the stretch reflexes.

One has difficulty distinguishing the point at which spinal shock ends and at which spasticity begins. After the signs of "spinal shock" disappear, increased stretch reflexes, withdrawal responses and the Babinski sign appear. Our patient apparently passed through to this stage rapidly. Though priapism was not described, it is a rather common finding, particularly in cervical cord injury.

Now to go on to a few other signs. The bowel was hypoactive. In thoracic and lumbar spinal injuries, paralytic ileus is almost the rule, whether or not the spinal cord has been damaged. I shall not enlarge on the paralysis of the bladder. As a practical point, I call attention to the proper management employed by the local physician. He placed an indwelling catheter to avoid overdistention of the bladder. The blister over the sacrum is worth mentioning. If proper skin care is not initiated at once, a decubitus ulcer can begin in less than 24 hours.

This man had a rather unusual injury for the production of a transverse spinal lesion; he fell on his face. He did not damage soft tissues appreciably, nor did he seem to suffer significant trauma to the brain. He presented a transection syndrome below the C5 level without roentgenographic findings, and I think this might be an appropriate time to call for review and interpretation of the x-ray films.

Dr. E. F. Van Epps, Radiology: In today's case we have a negative examination of the cervical spine. What does the word *negative* mean? It was negative for fracture and dislocation, but there were the usual degenerative changes frequently present in an individual of 61 years. Usually, these are most prominent at the C5-6 level. This man had degenerative changes at the C5-6 and C6-7 levels, with posterior fringing at C5-6. Myelograms show that the contrast material went no higher than C3 because there was no reason to have it go any higher. There is a block which is incomplete at C5-6. The indentations I have shown could represent a block due to a ruptured intervertebral disc, with edema of the nerves as they exit. I see no evidence of fracture. The patient had a history of trauma without gross evidence of present dislocation and/or fracture, and I would not be able to exclude a herniated intervertebral disc as the cause of the myelographic findings. It is also likely that contusion of the cord was present, with edema and intramedullary hemorrhage.

Dr. Van Allen: The roentgenograms give no obvious clue to the location of the lesion, nor indeed to the presence of a bony lesion. The myelograms suggest that the dye may have been seeping around a somewhat swollen cord. The Queckenstedt test is routine in these circumstances. I shall not take time now to describe the test. It could be interpreted as showing partial block, and interestingly enough, the fluid was clear, suggesting that there was no bleeding into the subarachnoid space and probably not into the cord.

Crutchfield tongs were applied very soon after

the patient's admission. As you know, these resemble a pair of ice tongs which are placed in small drill-holes in the skull. Considerable force can thus be exerted for the reduction of fracture dislocations of the cervical spine. Just why the tongs were used in the management of this patient is not clear, for a fracture or dislocation was not seen. I suspect that at the outset, his physicians didn't feel they could properly exclude a fracture, and thus applied the tongs as a precautionary measure.

I shall not belabor the indications for decompressive laminectomy in this case. There was immediate loss of function following the injury, and this is usually taken to indicate that an operation is not likely to be beneficial. A partial block was indicated by the Queckenstedt test and the myelogram, and some people think this finding is an indication for operation. One can be conservative and argue that little is to be gained from the exploration of a traumatic situation when there is immediate paralysis, and I would be inclined to this viewpoint. On the other hand, there is now a strong and indeed prevailing sentiment favoring exploration of the majority of such cases with the hope of accomplishing something, however little it might be. The findings at surgery constitute the unknown here.

Dr. Ziffren: I shall be glad to read them to you: "The epidural space was inspected and no evidence of bony fragment or fragment of disc was noted. The dura was then opened without rupturing the arachnoid, and it was noted that the arachnoid following the opening of the dura bulged through and pulsated quite readily. Traction sutures were placed in the dura, and the spinal cord was inspected. General palpation revealed no evidence of a bony ridge beneath the cord. The cord was then gently retracted and inspected on each side, and the surgeon looked as far interior as possible from each side. Again, no evidence of bony fragment or fragment of disc was noted. No bleeding was encountered. Following the exploration, it was noted that the cerebral spinal fluid pulsated from higher levels and flowed freely into the operative field."

Dr. Van Allen: The findings suggest an infarction of the cord either secondary to direct trauma, for which there seemed to be little sign, or secondary to some disturbance in circulation. The operative report does not describe bony or ligamentous injury, though one might assume that this spine was held together with rather poor ligaments, calcified in part. A hyperextension injury could tear the anterior ligament across several segments, thus leaving the vertebrae relatively free to slip forward and back without producing a visible fracture.

Just a few more words about the way the man died. In head trauma and meningitis, it is not uncommon for the patient to become hypotensive and to die with evidence of increasing encephalopathy. Bleeding into the gastrointestinal tract is the most common cause of shock in these circumstances, and is attributable to mucosal ulcerations. We don't often see this with spinal cord lesions. Perhaps with increasing respiratory difficulty, the patient developed a severe anoxic encephalopathy, and this in turn was associated with gastrointestinal bleeding.

Dr. Ziffren: Are there any questions you would like to direct to Dr. Van Allen?

Dr. G. Perret, Surgery: Dr. Van Allen, I don't think that you have told us what you think occurred in this patient's spinal cord. Do you assume that he had a complete interruption, that he had something like a transverse myelitis or that he had a partial softening due to vascular impairment? Don't you think this patient's peculiar clinical course, with a lower motor neuron lesion in the upper extremities and an upper motor neuron lesion in the lower extremities, with much sparing of function and with no obvious sphincteric abnormalities, could fit the acute central cervical cord syndrome described in 1954 by Schneider and associates?

Dr. Van Allen: As I said before, the unusual feature of this case was the patient's rapid passage through the state of spinal shock. As regards preservation of function below, I should say there was preservation of an isolated segment of cord. It is not apparent that he was engaging in any movement mediated from above, or that he had sensation below the level of the lesion. Perhaps there was some preservation of function, and perhaps not all descending influences were interrupted.

As to what happened to the cord, I wasn't quite as definite as I might have been. I suspect he had a transient dislocation, and that this contused his cord in some way. The cord became swollen and remained functionless. The possibility of traumatic occlusion of the arterial supply must be entertained, though at operation there was apparently little evidence of trauma to that area.

Dr. George Zimmerman, Pathology: The abnormalities at necropsy were limited to the spinal cord and to the gastrointestinal tract, and there was much mucoid secretion in the trachea and bronchi.

A 1 cm. segment of the spinal cord, at the C5-C6 level, was flattened. There was no appreciable hemorrhage or vascular thrombosis associated with this. In two cross-sections of the cord lesion, only a small part of the cord was not degenerated. A portion of the peripheral part of the dorsal columns seemed preserved, and some of the cord around the anterior sulcus and superficial strips of the lateral cord appeared normal. All of the rest of the cord cross-section showed variable degrees of degeneration. The mildest change was in the form of axis-cylinder degeneration and myelin beading. About a third of the cross-section of the

cord showed complete destruction of neural tissue, and only some fluid and a few phagocytes were seen in these areas. These histologic changes correlated well with the history of injury of about a week's duration. In a cross-section above the grossly recognizable injury, there was almost complete loss of anterior horn cells, so the damage extended beyond the 1 cm. segment of gross abnormality.

The posterior wall of the proximal duodenum contained an ulcer which extended through muscularis propria almost to the serosal surface. In another section of the ulcer, an artery extended into the necrotic tissue and inflammatory exudate that formed the base of the ulcer (Figure 1). This represented the immediate cause of death. Three liters of fresh blood were found in the stomach. There was no fibrosis of the duodenum around the ulcer, and no vascular sclerosis or chronic cellulitis. Therefore, this was apparently an acute ulcer—apparently a Cushing's ulcer secondary to cervical spinal-cord injury.

Dr. F. M. Skultety, Surgery: Were the spinal ligaments intact at the site of the cord lesion?

Dr. Zimmerman: There seems to be no reference to this.

Dr. Michael Bonfiglio, Orthopedic Surgery: What about ruptured discs?

Dr. Zimmerman: There is no reference to ruptured disc. The clinical summary mentions that at surgery the fifth spinous process was found to have been fractured. The spinal cord was removed completely, and the spinal canal was examined. Abnormal flexibility of the neck was noted, but this was attributed to the laminectomy. No other fractures were found.



Illustration 1: Cross section of duodenal ulcer. U—necrotic tissue in base of ulcer. M—muscularis propria. A—artery.

Dr. Ziffren: Dr. Perret, will you please say a few words about indications for operation, and also about the bleeding in this patient?

Dr. Perret: In Iowa City between 1953 and 1962, we had some 46 cervical spine injuries with cervical cord injury: two at C1 level, three at C2, three at C3, eight at C4, 20 at C5, eight at C6, and two at C7. Of 46 patients, 19 died. This is a mortality of approximately 40 per cent. The majority of those who died had C5-level injuries (11 out of 20).

Generally, the goal of surgical treatment is to put the spinal cord into the best possible condition for eventual recovery. As you realize from this case, x-ray films of the site of injury rarely give an accurate picture of the bones involved in the fracture, and the films are usually difficult to evaluate. Fractures found at operation or at autopsy are usually far more extensive than the radiologic evidence has led physicians to expect. Furthermore, roentgenograms may provide no indication of the degree of spinal-cord involvement itself.

Complete severance of the spinal cord can occur without any demonstrable radiologic anomalies of the vertebral column, as we have seen in this case. Occasionally we see complete fracture dislocation but no neurologic disturbance. The roentgenogram does not give one any idea about what to expect in the cord. However, the active treatment of spinal cord injury is treatment of what we see in roentgenograms. We try to realign the vertebrae. We put the patient into traction to relocate dislocated vertebrae, knowing well that by doing so we do not help or treat the spinal cord itself. If the patient recovers, the spine may then be in better alignment and heal in good position.

Skeletal traction, with the help of the Crutchfield tongs inserted into the cranial vault, is usually instituted as soon as the patient is admitted to the hospital. The weight, starting at 10 pounds, can be increased up to 35 pounds until reduction of the dislocation occurs.

As some neurosurgeons see it, laminectomy for cervical cord injury adds cervical trauma to the original insult, and thus increases the rate of morbidity and mortality. Other neurosurgeons, however, feel that laminectomy is indicated after a few days of skeletal traction, if no improvement has occurred. One advantage of early laminectomy lies in the visualization and removal of a ruptured intervertebral disc. Such a disc-rupture may have

been present in today's case, but it was not demonstrated by the pathologist. To be sure, diagnosis of intervertebral disc rupture can be made if localizing symptoms develop. However, ruptured intervertebral discs, especially in the cervical region, can escape notice and in some cases can compromise the blood circulation of the cord without producing subarachnoid block. Unfortunately, diagnosis might depend upon myelography at some period after irreversible spinal cord changes have already taken place.

Removal of abnormal discs through the anterior approach, and fusion of cervical-vertebral bodies with iliac bone fragments constitute a relatively simple procedure and have the advantage of shortening the period of skeletal traction. Fracture of the atlas or axis requires long-term immobilization of the head and neck by traction, or operative treatment consisting of fusion of the 3rd, 2nd, and 1st cervical vertebrae to the occiput. Laminectomy has a low morbidity and mortality and has played an important psychologic role in the traumatically paraplegic or quadraplegic patient whose injuries often are associated with severe psychologic trauma.

I believe that the patient becomes better adjusted to his ultimate condition if he feels that everything possible has been done for him. After the surgeon has laid the facts fully before the patient, he should offer him a chance to decide upon surgical exploration. Even though the patient realizes that in most instances laminectomy does not improve matters, he will seldom refuse it if he envisions any possible chance of improvement.

The question of gastrointestinal hemorrhage is a very complicated one. In the past five years approximately 100 papers have been written on the subject but none of these papers has fully explained why ulcers are produced and why hemorrhage occurs. Of course we must remember that gastrointestinal hemorrhages aren't always the result of brain tumors, neurosurgical operations, or brain or spinal cord injuries. They can also occur after any other type of trauma, and especially after burns or stressful operations. Our concepts of stress and neurosecretory humoral mechanisms have not completely explained the pathogenesis of the disturbances. Studies on gastric secretion do not reflect obvious differences between healthy people and people with brain disease. Hydrochloric-acid secretion apparently is not influenced by most central nervous system disorders. Most hemorrhages appear in men, but are rare in women. This difference could be explained by the fact that most cervical cord injuries occur in men. On the other hand, women have as many brain tumors as men do, but apparently have fewer gastrointestinal disturbances preoperatively and postoperatively.

At this institution, the overall incidence of so-called Cushing's ulcers or gastrointestinal hemorrhages in all types of neurosurgical diseases is 5.4 per cent. We have seen that gastrointestinal bleeding occurred in approximately 30 per cent of a group of cervical cord injury cases. Most of such hemorrhages are inconsequential, and only very few are severe.

The problem of anorexia can also be raised. Anorexia is commonly seen following trauma to the cervical cord and cerebral injuries. We have seen it in many patients with brain tumors. It has been produced in cats following cervical cord transection, but not after bilateral vagectomy. Anorexia may have something to do with local disturbances within the stomach.

The problem of atonia of the stomach and atonia of the gastrointestinal tract with paralysis may have something to do with the development of ulcer. Vascular phenomena may also be significant in the formation of gastric erosion. Experimentally, erosions were found related to foci of ischemic necrosis of the gastric mucosa which are probably similar to those we saw here, and some people think that they may be the result of transient ischemia produced by local vasoconstriction. Vasoconstriction is usually generalized, and frequently is associated with spinal cord injuries, brain injuries, increased intracranial pressure and brain tumors, and may be the result of an increase of adrenocortical hormones liberated by changes in the function of the neurosecretory cells of the hypothalamic nuclei. It is not known whether these changes are the result of inhibitory or excitatory stimuli, or whether they are caused by hypoxia or other physiologic disruption of pathways leading to the hypothalamus.

I wonder whether Dr. Guis, who has studied the blood vessels of the gastric mucosa, could throw some more light on the production of ulcer.

Dr. John A. Gius, Surgery: I'm afraid I won't be able to cover this very complicated situation in the time that is left. However, I should first like to suggest that although the acute erosion found here may be quite different from the chronic ulcer which occurs in this location, there are, I think, several common denominators. For example, under certain conditions the undiluted gastric secretions may attack and digest an area of decreased resistance in the duodenal mucosa. Probably a limited food intake, with inadequate neutralization of acid and certain alterations in the local blood flow, sets the stage for this catastrophe. The reason for local interference with vascular flow is not clear, but it may be either a case of too little or too much—that is, ischemia or stasis or both.

I think the last photomicrograph that Dr. Zimmerman presented showed a medium-sized artery and a large vein in the base of the mucosal ero-

sion which led to the fatal hemorrhage. Perhaps this arrangement also contributed to a local decrease in resistance to digestion, since it may actually have represented a local "hot spot" by virtue of the great blood-carrying capacity of these vessels.

As we know from basic chemistry, increased heat accelerates all energy exchanges, including digestion of the mucous barrier and mucous membrane, and the underlying blood vessels. Thus a vicious cycle begins. There is failure of the local resistance to digestion, continued production of corrosive secretions, erosion of tissue and vessels, hemorrhage with failing circulation, and shock leading to death. Thus the patient's "hot spot" becomes his vulnerable spot, and once this chain reaction begins, there is a convergence of factors which represent the process of dying. It was the end of the line, as far as this patient was concerned. If he had survived and if certain stresses had been added, perhaps a chronic duodenal ulcer might have evolved.

ANATOMIC DIAGNOSES

Traumatic myelomalacia, recent (C5-C6 level)
Acute duodenal ulcer with massive hemorrhage

STUDENTS' DIAGNOSES

Hemorrhage into spinal cord due to:
a. vertebral dislocation, or
b. herniation of intervertebral disc
Pyelonephritis
Cushing ulcer with massive hemorrhage

DR. VAN ALLEN'S DIAGNOSES

Transient dislocation of cervical vertebra with:
contusion of spinal cord, or
traumatic occlusion of blood supply to spinal cord
Massive hemorrhage due to Cushing ulcer

Coming Meetings

IN STATE

Jan. 21-22	**Obstetrics and Gynecology,** S.U.I. College of Medicine, Iowa City.
Feb. 18-21	**Refresher Course for the General Practitioner,** S.U.I. College of Medicine, Iowa City.

CONTINENTAL U. S.

Jan. 5-8	**Postgraduate Seminar in Anesthesiolgy,** Eden Roc Hotel, Miami Beach.
Jan. 6-10	**Nuclear Medicine and Radiation Biology,** University of California Medical Center, Los Angeles.
Jan. 9-11	**Internation Heart Meeting,** Hotel Fontainebleau, Miami Beach.
Jan. 12-18	**Tenth Annual General Practice Review,** University of Colorado School of Medicine, Denver.
Jan. 13-17	**Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs,** Hotel Fontainebleau, Miami Beach.
Jan. 14-16	**Thirteen Cardiacs (Medical College of Georgia and Foundation),** Augusta.
Jan. 16-17	**Obstetrics and Gynecology,** University of Nebraska College of Medicine, Omaha.
Jan. 17-18	**Symposium on Hypertension and Coronary Artery Disease (American Therapeutic Society and Minnesota Heart Association),** Radisson Hotel, Minneapolis.
Jan. 18-23	**American Academy of Orthopaedic Surgeons,** Palmer House, Chicago.
Jan. 20-23	**Cardiovascular Drug Therapy,** Marriott Motor Hotel, Philadelphia.
Jan. 22-25	**Neurosurgical Society of America,** Wigwam Hotel, Phoenix.
Jan. 27-29	**Medicine and the Law,** University of Kansas School of Medicine, Kansas City.
Jan. 27-29	**American College of Surgeons,** Lord Baltimore Hotel, Baltimore.
Jan. 27-31	**Newer Concepts in Internal Medicine (Co-sponsored by Louisiana State University and Tulane University),** New Orleans.
Jan. 30-Feb. 1	**Postgraduate Assembly in San Antonio,** Granada Hotel, San Antonio.
Feb. 1-2	**Midwinter Radiological Conference,** Biltmore Hotel, Los Angeles.
Feb. 5-7	**American Academy of Occupational Medicine,** Statler Hilton Hotel, Hartford.
Feb. 5-8	**American College of Radiology,** Ramada Inn, Sands Hotel, Tucson Desert Inn, Tucson.
Feb. 7-12	**American Academy of Allergy,** San Francisco.
Feb. 8-11	**Congress on Medical Education,** Palmer House, Chicago.
Feb. 10-11	**Atherosclerosis and Peripheral Vascular Disease,** University of Nebraska College of Medicine, Omaha.
Feb. 10-14	**Medical Society of the State of New York,** The Americana, New York City.
Feb. 10-14	**Chiefs-of-Staff Conference,** University of Colorado Medical Center, Denver.
Feb. 10-14	**Hypertension and Its Complications,** Medical College of Georgia, Augusta.
Feb. 10-14	**Medical-Surgical Clinical Symposia,** University of Kansas School of Medicine, Kansas City, Kansas.
Feb. 12-16	**American College of Cardiology,** Roosevelt Hotel, New Orleans.
Feb. 13-15	**Society of University Surgeons,** Los Angeles.
Feb. 17-19	**American College of Surgeons (sectional meeting),** Denver-Hilton Hotel, Denver.
Feb. 17-19	**Radiology and Radioactive Isotopes,** University of Kansas School of Medicine, Kansas City, Kansas.
Feb. 18-20	**Obstetric Problems in Private Practice,** Medical College of Georgia, Augusta.
Feb. 19-21	**Sioux Valley Medical Association Annual Meeting,** Sheraton Cataract Hotel, Sioux Falls.
Feb. 20-21	**Psychiatric Problems of Children and Their Family,** University of Nebraska College of Medicine, Omaha.
Feb. 24-25	**Vectorcardiography,** University of Kansas School of Medicine, Kansas City, Kansas.
Feb. 24-28	**Recent Advances in Metabolic Diseases,** Mount Sinai Hospital, New York City.
Feb. 27-28	**Heart Association of Southeastern Pennsylvania,** Sheraton Hotel, Philadelphia.
Feb. 27-29	**American Academy of Forensic Sciences,** Drake Hotel, Chicago.
Feb. 27-29	**Central Surgical Association,** Rochester, Minnesota.
Feb. 29-Mar. 5	**International Academy of Proctology,** Deauville Hotel, Miami Beach.
Feb. 29-Mar. 6	**American College of Allergists,** Americana Hotel, Bal Harbour.



A NEW YEAR'S WISH

As the nation enters the New Year—an election year—may the sad events of November 22 prompt greater restraint in the expression of political differences. Freedom of speech is one thing; freedom to abuse and to villify is quite another. Differences of party or of philosophy should not lead to disrespect or to hate. It is to be hoped that the merit of platforms and the qualifications of candidates will constitute the important issues and will determine the outcome of elections.

May all Americans speak "with the tongues of men and of angels."

THE PHYSICIAN'S ROLE IN THE CONTROL OF ALCOHOLISM

The dimensions of alcoholism in this country are not fully recognized. When we are told that it is the third most serious public health problem in our nation, we begin to bring the malady into proper perspective. Reasonable estimates place the number of alcoholics in the United States at 5,000,000. In other words, one out of every 20 adults is an alcoholic, and one in every 13 men over 20 years of age has that dubious distinction!

We tend to think that alcoholism is confined to occupants of skid row, but we are wrong. It reaches into all levels of society, and occurs in your town, on your street, and among your patients. Increasing numbers of women are becoming alcoholics.

In 1961, it is estimated, $11,000,000,000 was spent on alcoholic beverages in the United States. That was an expenditure of $62 per capita. The annual cost of alcoholism in its various parameters, however, has been said to equal the annual budget for the Defense Department. The cost in human suffering—in indignities and in adverse impact upon homes and families—cannot be summated in finite terms.

Physicians, generally, have an ambivalent attitude toward the alcoholic. They acknowledge that alcoholism is a disease and that the alcoholic is a sick person, but at the same time they show a moral indignation toward the alcoholic. In consequence, they concern themselves too little about the early detection of alcoholism, and their attitude interferes with their making an objective and sympathetic approach to the treatment of the disease.

These patients require a great deal of time and effort, and they are notorious for breaches of promise and for lapses from sobriety. The physician's rapport with the patient, his attitude, and his sympathetic understanding are essential to recovery. It is the family physician who is best qualified to assist the alcoholic in mustering his strength, his restraint and his other inner resources to cope with his problem. Most unfortunately, though the doctor has treated the acute phase of the disease, he relinquishes the patient to Alcoholics Anonymous and feels relieved of further responsibility.

It is becoming generally recognized that the problem of alcoholism is a community responsibility. Cooperation among physicians, hospitals, clergymen, judges, policemen, social welfare workers and the personnel of various other agencies is necessary if any measure of success is to be obtained.

Confronted with a medical problem of this magnitude, it is the medical profession which should assume the aggressive role in its solution. It would appear wise for the IMS to establish a special committee on alcoholism, as several other state medical societies have done. Similar committees at the county level could implement a statewide program to help alcoholics and to further an educational program for preventing the disease. Medicine can no longer ignore this challenge or shun this responsibility.

NEPHRITIS OF ANALGESIC ABUSE

In the last two years, American physicians have become acutely aware of the possibility that certain analgesics may cause nephrotoxicity. There is still doubt, however, concerning the pathogenesis and the responsible compounds, and some uncertainty remains that analgesic-drug abuse will cause clinical kidney damage under any ordinarily encountered circumstances.

The evidence to support the existence of a renal lesion from analgesic abuse began to accumulate with a study by Spühler and Zollinger.* They noted a rise in the incidence of interstitial nephritis after 1950, and observed that many of the patients had associated and unexplained medullary necrosis. They elicited histories of phenacetin abuse from many of their patients, and marshalled the facts to suggest an association between excess use of phenacetin and renal disease. A number of other studies supporting this association soon followed. Increased abnormalities in the urine sediment following the ingestion of a num-

* Spühler, O., and Zollinger, H. U.: Die chronisch-interstitielle Nephritis. ZTSCHR. KLIN. MED., 151:1-50, 1953.

Editorials continued...

ber of analgesics, and improvement of the nephropathy when the drug ingestion was stopped, supported the association. Experiments with analgesics have failed to produce similar renal lesions.

The clinical picture suggests that certain patients may develop interstitial nephritis and medullary and papillary necrosis after long exposure to analgesics, particularly to those containing phenacetin. Characteristically, the patients develop nocturia and may have azotemia. Usually they have mild proteinuria and pyuria without bacilluria. Bacterial infection may occur, but pyuria without bacilluria is an important finding in many. Renal colic caused by the sloughed papillary tips' migrating down the ureters is a prominent clinical feature. By no means, however, do all patients who take large quantities of analgesics develop these renal defects.

Although phenacetin has been implicated as the major offender, histories of persons thought to have analgesic nephropathy indicated that these patients usually do not distinguish or discriminate between various analgesic preparations. Thus, while they may take much phenacetin, they also take aspirin, caffeine, codeine, dextropropoxyphene (Darvon) and other agents with analgesic properties. For this reason and in the absence of complete information on the pathogenesis of the lesion, the name "phenacetin nephritis" is inappropriate.

If one assumes that there is a specific lesion in the kidney caused by phenacetin or a related analgesic, the method of production of the lesion is most puzzling. The possibility that phenacetin, other analgesics, or some of their byproducts have a direct biochemical effect on the cells of the renal parenchyma has very little experimental support. The fact that most patients taking these compounds do not have renal lesions constitutes a strong argument against this proposal. These drugs or their metabolites may increase the susceptibility of the kidney to infection. This cannot explain all of the damage, since many of these patients have sterile urine and since organisms cannot be cultured from the renal parenchyma. The analgesics may exert their toxic effect on the kidneys through an effect on the hemoglobin molecule. Many of these compounds produce methemoglobinemia, sulfhemoglobinemia and other oxidation products. Considerable evidence supports the view that high levels of methemoglobinemia may be acutely nephrotoxic. Methemoglobin is poorly soluble, and this material could be deposited in the papillary areas of the kidney to cause the tissue damage. Patients with sickle-cell anemia have an increased incidence of pyelonephritis and also have papillary necrosis. Recently it has been postulated that sickling occurs in the medullary portion of the kidney at relatively high partial-pressures of oxygen, because of the hyperosmolarity of the fluids there. Such sickling *in situ* could be responsible for the renal damage observed in these patients. Similarly, red cells and hemoglobin are damaged by the analgesics. Possibly acute destruction of the damaged cells might occur in the hyperosmolar areas of the kidney, producing the interstitial damage as well as the infarcts with medullary and papillary necrosis.

"Phenacetin nephrotoxicity" may be caused by a contaminant in the compound. Harvald, Valdorf-Hansen and Nielsen** noted that all European samples of phenacetin made by modern manufacturing methods contain a contaminant, acetic-4-chloranilide. Before the mid-1930's, phenacetin was manufactured by synthesis from 4-nitrophenol, and this contaminant was not a byproduct of that process. More recently, phenacetin has been prepared from 4-nitro-chlorbenzol, and the by-product acetic-4-chloranilide occurs regularly. Variations in the concentration of this contaminant could explain the increased recognition of "phenacetin nephritis" in recent years. Finally, the nephrotoxicity may be secondary to a hemolytic effect of the analgesics, or to vascular sensitivity reactions produced by them.

The pathologic changes of analgesic nephropathy are not clear cut. The patients may have interstitial nephritis, signs of pyelonephritis, and papillary or medullary necrosis associated with analgesic abuse. It has been reported that the interstitial tissue of these patients is usually infiltrated with lymphocytes and plasma cells in the transition zone between the cortex and medulla. Damaged tubules with numerous collagen fibers are seen with relative sparing of the glomeruli. Other reports have indicated little specificity in the lesion, and many of the reported patients have had findings identical with those of pyelonephritis. The high incidence of papillary necrosis, however, suggests that the underlying defect is a specific one. Another point to support this view is that microcrystallization has been noticed as occurring in these patients by Rapoport, White and Ranking.† The nature of the crystals is not known.

Considering the low incidence of renal damage in patients who take large quantities of analgesics, and the confusion concerning pathogenesis and pathology, it is understandable that certain workers have reservations as to the existence of analgesic-induced renal damage. Most authors, however, have interpreted the evidence as supporting the view that renal damage may follow chronic ingestion of these compounds.

Certainly it behooves the physician to consider this possibility in patients who have renal disease

** Harvald, B., Valdorf-Hansen, F., and Nielsen, A.: Effect on kidney of drugs containing phenacetin. LANCET, 1:303-305, (Feb. 6) 1960.

† Rapoport, A., White, L. W., and Ranking, G. N.: Renal damage associated with chronic phenacetin overdosage. ANN. INT. MED., 57:970-980, (Dec.) 1962.

and who give histories of chronic analgesic-drug ingestion. If the patient has pyuria without bacilluria, if he expels papillary tips from time to time, and if he has no evidence of other causes for this phenomenon, serious consideration should be given to the possibility that the renal lesion is drug-induced. If other causes for the nephritis can be excluded, improvement in kidney function may be expected if the analgesics are stopped, since a few reports suggest that this is a reversible disease.

—WALTER M. KIRKENDALL, M.D.

INTERMITTENT ADMINISTRATION OF STEROIDS

Thorn and his colleagues at Harvard observed that the therapeutic effects of steroids persist longer than the metabolic effects. This observation led them to experiment with various intermittent dosage schedules. In a recent study,* they have reported therapeutic success with the administration of the total 48-hour amount of the drug in a single dose given every other day, rather than in the accustomed four doses per day, with a resulting reduction in the incidence and severity of side effects.

According to the Boston group, studies indicate that patients with absolute or relative adrenal insufficiency may be those who can safely be maintained on daily physiologic doses of steroids, and cannot safely be taken off this daily replacement therapy. On the other hand, patients with normal adrenal function appear to be those who require pharmacologic doses of steroids that result in Cushing's syndrome and its various complications. It is this latter group of patients who *can* and *should* be treated by every-other-day dosage schedules. The authors think it wise to assess adrenal function as part of the diagnostic investigation of patients who are being considered for steroid therapy.

The study appeared to show that for successful every-other-day therapy, there must be adequate secretion by the adrenal on the off-day. The 48-hour dosage interval would seem to avoid the hazard of adrenal suppression, and may indicate the establishment, in some degree at least, of a normal adrenal-pituitary activity. Patients on intermittent dosage did not require supplemental steroids during periods of stress, and thus it seemed that there was normal adrenal function under those circumstances. It was also observed that the patient on intermittent dosage suffered no serious consequences from an abrupt discontinuance of the drug.

Physicians are admonished to avoid the indiscriminate use of steroids, even though the every-other-day schedule offers greater safety in their use. In the judgment of the authors, the use of the recently-developed "depot" preparations is unnecessary and undesirable in patients with normal adrenal function, because of the side effects and the suppression of adrenal function. Those who are treating patients with steroids are urged to familiarize themselves with the details of the Thorn study.

The Harvard group concluded their report by stressing the importance of assessing adrenal function in those patients who are being considered for steroid therapy. In long-term steroid therapy, intermittent dosage appeared to be just as efficacious as daily divided doses, and to bring about substantially fewer side effects.

* Harter, J. G., Reddy, W. J., and Thorn, G. W.: Studies in intermittent corticosteroid dosage regimen. NEW ENGLAND J. MED., **269**:391-396, (Sept. 19) 1963.

THE NATURAL HISTORY OF URINARY-TRACT INFECTION

A recent follow-up study of 133 children hospitalized for urinary-tract infections at the Massachusetts General Hospital between 1940 and 1950* provides a unique opportunity to appraise the natural history of the condition. In 1961, from 11 to 27 years after the onset of infection, it was possible to obtain detailed information on 72 of this group of patients. The data that were gathered clearly demonstrated a high incidence of persistent infection, advancing renal insufficiency, and a significant mortality in these people who had had their initial infection during childhood.

Thirteen patients (18 per cent) had died; 16 (22 per cent) were living with persistent infection; and 6 (8 per cent) had progressive renal insufficiency. Of the 72 patients on whom follow-up information was gathered, 37 (52 per cent) were living and well, without evidence of disease.

In the original group there had been three times as many girls as boys. Of the 13 patients who had died, at the time of the study, nine were males and four were females. In those with continuing urinary-tract infection at follow-up, 14 were female and 2 were male. The six patients with progressive renal insufficiency were equally divided between the sexes.

Thirteen of the 37 patients who were well at the time of the follow-up had originally been classified as having a urinary-tract infection; 16 had had probable pyelonephritis; and eight had had proved pyelonephritis. By contrast, 16 of the patients with continuing urinary-tract infection had originally been equally divided among the classifications of "urinary-tract infection," "probable pyelonephritis" and "proved pyelonephritis." Of the six survivors with advanced renal insufficiency, four had earlier been classified as having proved pyelonephritis.

The study indicated that the age of onset of the

* Steele, R. E., Leadbetter, G. W., and Crawford, J. D.: Prognosis of childhood urinary-tract infection; current status of patients hospitalized between 1940-1950. NEW ENGLAND J. MED., **269**:883-889, (Oct. 24) 1963.

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infection was of real significance in the prognosis of the disease. Originally, 48 per cent of those with onset before two years of age had proved pyelonephritis. Patients with onset before two years of age had a mortality rate of 28 per cent. By contrast, the highest mortality in any of the older groups was 14 per cent. Sixty-two per cent of the deaths were in the group of patients who had had onsets before the age of two years. Among the survivors who were well and free from infection, all had had onsets of urinary-tract infection during the later years of childhood.

An obstructive lesion of the urinary tract was demonstrated in 35 per cent of the patients in the original study. The lesions were usually bladder-neck obstruction, urethral stricture, or posterior urethral valves. In another 33 per cent, an abnormality was suggested by the presence of hydronephrosis, and renal biopsy showed the presence of pyelonephritis. However, the precise etiology was obscure. In the remaining one-third of the group, no abnormalities were demonstrated on pyelographic study.

Of considerable importance was the finding that 14 of the female survivors had had a total of 28 pregnancies. Thirty-six per cent had had urinary symptoms during pregnancy or during the postpartum period. Twenty-one per cent gave histories of toxemia of pregnancy.

As a result of the study, the authors concluded that children with urinary-tract infection, regardless of their age or sex, should have complete urologic studies and carefully considered treatment. In children under two years of age, diagnostic studies should not be deferred, for in that group the prognosis is especially grave. Follow-up evaluation is advisable in children and adults who have histories of urinary-tract infection, because of the lack of correlation between the severity of symptoms in childhood and the ultimate course.

THE M.A.A. PROGRAM

Medical Assistance for the Aged under the Kerr-Mills Law became effective in December. The implementation of this program has received the support of organized medicine because eligibility is to be based on need, and because free choice of physician is safeguarded, usual and customary fees are to be paid, and administration is to be at the local level.

The State Department of Social Welfare has provided every physician with an Information Sheet outlining its policies and the various procedures to be followed in the program. These appear to impose a minimum of red tape and paper work upon the physician.

The success of the program depends upon cooperation between the physicians and the Department—and success is imperative if a much less desirable plan of medical care for the aged is to be averted. Care must be exercised to assure the fiscal soundness of the program, and if at all possible, to carry it out within the appropriation which has been set up for it. Obstinancy and tactless resentment of lay supervision will accomplish nothing and will place the entire plan in jeopardy. Times change, and socioeconomic conditions are not static. Organized medicine and the individual physician must offer convincing evidence that the welfare of the people is their primary concern.

Legibility in Prescription-Writing

A behind-the-scenes effort to widen margins of safety for patients is beginning to take shape in hospitals across the land. It is a story of professions working together in an area that for years has been shaded by lawlessness, carelessness and misuse of health skills. Playing leading roles are nurses, pharmacists, hospital administrators, lawyers, insurance investigators, physicians, state law enforcers and federal fighters for poison control. Their common goal: to reduce medication error.

Illegibility of prescriptions, showing that "the pen can be deadlier than the sore," has been attacked in handwriting courses, which have been welcomed by physicians in Chicago, New York and other cities. Unorthodox prescription symbols which lend themselves to misinterpretation by druggists have been exposed in professional journals. Elderly patients, particularly prone to mistakes, are receiving special medicine-taking instruction by physicians.

In one community two patients died from overdoses of a digitalis preparation last November when a pharmacist had thought the prescriber's symbol "Q.O.D." stood for "four times a day." The physician had meant it to mean "every other day." Actually, pharmacy has no such symbol; investigators believe it had been "invented" by resident physicians in a nearby institution.

It is in hospitals—particularly in the large majority which have fewer than 100 beds—that current efforts are underway to strike back at medication error. A mighty blow is needed, for the American Society of Hospital Pharmacists reports that in more than half of the 7,000 hospitals in the U. S. (including state and federal hospitals) potent drugs are being dispensed daily in violation of state pharmacy laws. Hospitals buy 20 to 30 per cent of the prescription drugs sold in the U. S., and in 55 per cent of these institutions there is no pharmacist control over drug dispensing. Chief victim is the patient.

—From the April, 1963, issue of MEDICINE AT WORK.

President's Page



In wishing you a Happy New Year, I must urge you to act on the problems that continue to face organized medicine—ones on which your State Medical Society needs your cooperation both as individuals and as county groups.

Iowa's program for Medical Aid to the Aged, according to reports that have appeared in the newspapers, is attracting large numbers of applicants. Once again I want to urge doctor participation and county society cooperation in the implementation of this program. Its success is essential if the usual and customary fee concept is to be maintained.

I also want to remind you that the IMS Policy Evaluation Committee will meet shortly, and that whatever suggestions you wish to offer with regard to Blue Shield contracts must be submitted immediately. If your state officers are to succeed in their negotiations with Blue Shield, the first requisite is that they be fully informed of the wishes and the attitudes of physicians throughout the state and in every type of practice.

King-Anderson Bill hearings are to resume, before the Ways and Means Committee of the U. S. House of Representatives, on January 20, and with each passing day it is becoming clearer that 1964 will be a decisive year for the socialized medicine issue. Friends of free enterprise must voice their protests individually and in chorus as never before.

C. W. Edwards Sr.

President

Highlights of IMS Officers' Meetings

Information contained herein is based on reports to, and actions of, the IMS Executive Council during its November session.

MEDICAL AID FOR THE AGED

The IMS president reported that although specific appointments to the State Claims Review Committee, which will function in conjunction with the MAA program, have not been completed, an effort will be made to include physicians from various geographical locations and appropriate specialty groups.

In reference to county review committees, the president explained that a letter will be transmitted to all county medical society presidents, asking them each to appoint a county review committee. He urged each councilor to cooperate with the counties in his district in the establishment of these committees. The question was raised as to whether "area" committees would be more desirable than individual county committees, and the president explained that where it is deemed feasible and necessary, two or more county medical societies may join together in appointing a committee. In this connection, it was pointed out that whenever possible, physicians within a specific county should be given an opportunity, and encouraged, to settle any local problems.

The Council was informed that soon after January 1, the Society will undertake a survey to update the county ranges of fees, which are based on information received in a survey conducted in 1960. It was explained that in the 1960 survey, 450 procedures were included on the questionnaire, but that not all of these items will need to be incorporated in the new survey, since not all medical services will be utilized by the eligible recipients.

KING-ANDERSON HEARINGS

Correspondence concerning the scheduling of hearings on the King-Anderson Bill by the House Ways and Means Committee, November 18 through November 27, and the importance of conducting a statewide letter writing campaign in opposition to the Bill, was reviewed, including:

(1) A letter to IMS county King-Anderson chairmen

(2) A letter to the presidents of county medical societies, in which King-Anderson chairmen have not been appointed

(3) An IMS NEWS BULLETIN to all Society members, with an appropriate enclosure

(4) A letter to all members of the Woman's Auxiliary

It was reported that, except for minor changes suggested by the AMA, a statement prepared by the IMS in opposition to the King-Anderson Bill (see "In the Public Interest," in the December JOURNAL) would be submitted to the House Ways and Means Committee during the week of November 25, and an appropriate news story would be released to the press. The Council was also informed that Senator Edward Wearin of Red Oak would personally testify in opposition to the Bill on Friday, November 22.

(NOTE: Following the tragic assassination of President Kennedy on Friday, November 22, the hearings of the House Ways and Means Committee were recessed. Since that time, the Society has been informed that a statement prepared by Senator Wearin was submitted in manuscript form to the Committee, and copies of Society testimony will be filed at some future date.)

AREA MEETINGS

IMS and Blue Shield representatives who have attended the joint IMS-Blue Shield area meetings held throughout the state during September, October and November, generally agreed that attendance varied from poor to good. The major portion of the general discussion periods concerned Blue Shield. A Blue Shield representative commented that most of the "unhappiness" of physicians seemed to be directed toward Blue Shield and not the IMS; that the criticisms of Blue Shield were broad, generally vague, and poorly defined; and that lack of communication was undoubtedly the cause of much of the criticism.

IMS CANDIDATE FOR OFFICE OF AMA PRESIDENT-ELECT

The president presented Dr. D. F. Ward, Dubuque, IMS delegate to the AMA and AMA vice-president, who, by action of the Executive Council in mail ballot, has been endorsed by the IMS as a candidate for the office of president-elect of the AMA. He announced appointement of the following committee to serve in Dr. Ward's behalf: delegates L. W. Swanson, M.D., and H. J. Smith, M.D., and alternate delegate E. M. Smith, M.D.

IPPL

For informational purposes, Dr. R. C. Brown, Mason City, chairman of the Iowa Physicians Political League, appeared before the Executive Council and outlined projects and activities which will be undertaken by his group in the near future. He announced that special area meetings to which

all physicians will be invited are tentatively scheduled as follows:

DISTRICT I
Burlington ..... January 13, 1964
Davenport ..... January 14, 1964
Iowa City ..... January 15, 1964

DISTRICT II
Dubuque ..... January 16, 1964
Cedar Rapids ..... January 20, 1964

DISTRICT III
Mason City ..... January 22, 1964
Waterloo ..... February 13, 1964

DISTRICT IV
Marshalltown ..... January 23, 1964
Ottumwa ..... January 27, 1964
Creston ..... January 28, 1964

DISTRICT V
Des Moines ..... January 29, 1964
Fort Dodge ..... January 30, 1964

DISTRICT VI
Spencer ..... February 3, 1964
Sioux City ..... To be announced

DISTRICT VII
Council Bluffs ..... February 5, 1964
Carroll ..... February 6, 1964

CONCLUSIONS OF THE PLAN AND SCOPE COMMITTEE REGARDING THE USUAL AND CUSTOMARY FEE CONCEPT

The Executive Council approved the following statement regarding the usual and customary fee concept, as recommended by the IMS Plan and Scope Committee.

I. In the MAA program, and in physician participation in future programs, the usual, customary and reasonable charge of the physician should be maintained on the basis of ranges of fees within a county or group of counties, subject to adjudication by county and/or state review committees. In these programs, recognition should be given to the fact that the usual, customary and reasonable fees of any physician may of necessity from time to time require revision dependent upon the exigencies of his own practice. (It follows that recognition of the necessity of periodical review of their fee ranges by the physicians of respective counties will be necessary.)

II. A statewide review committee, composed of physicians from various geographic locations and specialty organizations, should work in close cooperation with constituent county review committees in adjudicating questionable claims, and should assume responsibility for referring such claims to appropriate committees and/or councils of the county or Iowa Medical Society. In situations where there is not a functioning county or multi-county committee, the state review committee should assume its responsibility. Responsible and knowledgeable physicians should be invited to serve on these review committees.

III. County committees should assume responsibility for ascertaining whether or not physicians within a county are actually charging their usual, customary and reasonable fees. In this connection, it is recommended that under the MAA program the fiscal agent should be requested to submit a list of all physicians' charges for review by the state committee each month. The state committee would in turn refer appropriate and pertinent information to each respective county society review committee so that local surveillance of usual, customary and reasonable charges can be maintained. The county committees would be requested to report back to the state review committee, supplying that committee with such information as is necessary to confirm that reasonable, usual and customary charges are being made.

IV. Physicians who insist upon exceeding the range of usual, customary and reasonable charges of their respective counties by consistently submitting higher charges for services rendered should be invited or requested not to participate in the MAA program (or other programs). Surveillance over situations where physicians may be involved in any unethical procedures should be continually maintained by appropriate county and Iowa Medical Society committees and/or councils.

V. Adequate staff and facilities should be available in order to properly carry out the administrative duties in connection with the MAA program and other programs involving the usual, customary and ordinary charge concept, in order to insure their success.

BLUE SHIELD MAJOR MEDICAL CONTRACT

For informational purposes, a member of the Blue Shield Board of Directors outlined provisions of a major medical contract being developed by Blue Shield. The Council was informed that the contract, which is an indemnity and not a service contract, will be sold only as a supplement to basic coverage; payment for services will be made directly to the patient—partly for convenience, and partly because payment will cover total billings; and either a $5 unit (Green Book) or county ranges of fees will be utilized as a guide for screening claims.

A memorandum from the president of Blue Shield to members of the Blue Shield Board of Directors was reviewed, in which it was reported that Blue Shield is ready to proceed with printing and selling major medical coverage. Those present were reminded that at the 1963 Annual Meeting, the House of Delegates recommended that it be provided opportunity to review all major contracts developed by Blue Shield before public sale, and the Executive Council was assured by Blue Shield representatives that the major medical contract would be submitted to the House of Delegates before it is placed on the market.

It was also pointed out that the House of Delegates recommended that Society representatives join with Blue Shield officials in meeting with the Iowa Insurance Commissioner to review proposed new contracts, and the Council was informed by Blue Shield representatives that, as indicated in the memorandum to the Blue Shield Board of Directors, a conference between Blue Shield and the Commissioner had already been held, but that such conferences are necessary to work out the mechanics of developing a contract.

The Executive Council approved a motion reiterating the recommendations of the Reference Committee on Insurance and Medical Service concerning Blue Shield, which were based on Supplemental Report "D" of the Board of Trustees as adopted by the House of Delegates in April, 1963.

The Council was informed that beginning November 15, Blue Cross-Blue Shield established a 30-day open-enrollment period for the Senior 65 program (30 days) and Senior Citizens program (70 days). It was reported that, to date, approximately 10,000 senior citizens are enrolled in one of these two contracts, and countless others undoubtedly have coverage from commercial insurance carriers.

GOVERNOR'S COMMITTEE

Dr. S. P. Leinbach, chairman, IMS Board of Trustees, and the Society's representative on the Governor's Committee to study the State Department of Health, reported that the committee has already held several meetings, and after a thorough study and investigation, will make recommendations concerning the selection and appointment of a new Commissioner of Health, salary considerations for the Commissioner, the function of the State Board of Health, and other matters relating to the State Department of Health.

MEDICAL ASSISTANTS' TRAINING PROGRAM

Dr. O. N. Glesne, a past-president and chairman of the Medical Assistants' Advisory Committee, informed the Council that Miss Elizabeth Kerr, R. N., state director of vocational education in the health area, is developing plans for the establishment of a school for training and educating medical assistants, as a pilot program, and has asked IMS endorsement and guidance in implementing the project. Essentially, it is proposed that the program be established in conjunction with a junior college, and that training be concentrated in two areas—(a) general office responsibilities, such as those of bookkeeper, receptionist, etc., and (b) technical assistance—the services provided by nurses, licensed practical nurses, etc. Dr. Glesne reported that federal funds will be available to underwrite 50 per cent of the teachers' salaries, and that the remaining expenses would be met by tuition and local school funds. Following a lengthy discussion, the Executive Council recommended that an appropriate committee of the Society explore the advisability of developing a pilot training program for medical assistants, and report to the Council at a future meeting.

Plasmapheresis

A process by which large quantities of blood can be obtained from a relatively few donors was demonstrated at the Second International Symposium on Hemophilia, December 7, in Washington, D. C. The process, technically known as plasmapheresis, is done with simple disposable equipment. Introduced by Fenwal Laboratories, it makes possible as much as a quart of plasma per week for three months from a single donor.

In a special study, six donors gave a total of 26½ liters of plasma. Using traditional procedures, it would have taken 106 donors to provide that amount.

In particular, this process would be of great use to hospitals and medical centers that treat hemophiliacs. Bleeding in the hemophiliac may occur internally or externally, requiring any number of transfusions, and possibly resulting in crippling or even death.

Filmed Discussion of Halothane

Ayerst Laboratories offers to lend a 45-min., 16 mm., black and white film of a recent round-table discussion arranged by Exerpta Medica Foundation, entitled "Halothane: A Report of Current Medical Opinion." The panelists included Max Sadove, M.D., of Chicago; Michael Johnstone, M.D., of England; Leonard Fabian, M.D., of Jackson, Mississippi; Leroy Vandam, M.D., of Boston; Raymond Courtin, M.D., of Dallas; and J. Gordon Robson, M.D., of Montreal. Copies of a complete, word-for-word transcript of the discussion are also available for distribution at the time of each showing of the film.

Program chairmen for county medical societies or hospital staffs can make advance bookings with Ayerst Laboratories, 685 Third Avenue, New York City 10017.

The Walter L. Bierring and Frances Brophy Awards

Nominations for the 1964 Walter L. Bierring and Frances Brophy Awards must be submitted no later than February 15. They will be presented, at the annual meeting of the Iowa Tuberculosis and Health Association in Des Moines on April 9, to the individuals (or for the Brophy Award it may be a group of persons) who have contributed most significantly during the past year to the improvement of tuberculosis control in Iowa.

Information about procedures can be secured from the TB Association headquarters, 1818 High Street, Des Moines 50309.

THE JOURNAL *Book Shelf*



BOOK REVIEWS

MEDICINE IN THE UNITED STATES AND THE SOVIET UNION, by *George A. Tabakov,* M.D. (Boston, The Christopher Publishing House, 1962. $4.95).

Three years ago I was one of a group of 15 American physicians who spent a month in Russia observing medical practices and hospitals there. I came away with the impression of inadequacy and very poor quality. The Russians were unable to show us any modern care, facilities or supplies, and we never saw a research project at all.

Dr. Tabakov has put together a wonderful and interesting book about what the Russians claim to be doing, but I am still wondering if all they claim is just for propaganda purposes.—*Fred Sternagel,* M.D.

THE POPULATION DILEMMA: POLICY FOR AMERICA, ed. by *Phillip Hauser* for the American Assembly (Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1963. $3.95 for the cloth bound, or $1.96 for the paperback).

This book of less than 200 pages consists of a collection of papers on various aspects of demographic problems in this country and throughout the world, prepared as background reading for an American Assembly meeting in May, 1963, at Columbia University.

The essays, written by outstanding authorities on population growth and distribution are presented in an objective manner, without the usual frightening implications of the "population explosion." It is emphasized that except in a general way there is no overall world population problem, but there are population problems varying in nature and degree among the different nations of the world, for which no single solution is applicable. However, the effects of population growth transcend national boundaries and have significant social, economic and political impact far beyond the country or continent.

Readers will find this small volume informative, interesting, and provocative.—*Dennis H. Kelly, Sr.,* M.D.

MAN AND HIS FUTURE, ed. by *Gordon Wolstenholme* (Boston, Little, Brown and Company, 1963. $6.00).

This book contains the edited versions of papers given at a symposium in London on the subject of "Man and His Future" under the auspices of the Ciba Foundation. Twenty-seven distinguished scientists presented papers or participated in discussion groups on a wide variety of subjects relating to the biological, environmental and social aspects of the future of man.

The reader will be impressed by the marked diversity of opinion and of philosophy in this group, and the controversial and provocative nature of the subject matter discussed. Essays considered many questions, from fertility control, eugenics, genetics, molecular biology, and the promise of the medical sciences, to the biological possibilities in the next ten thousand years.

The conflicting ideas of this able group make interesting reading, and the scientific flights of fancy stimulate the imagination of the reader.—*Dennis H. Kelly, Sr.,* M.D.

REVIEW OF MEDICAL PHYSIOLOGY, by *William F. Ganong* (Los Altos, California, Lange Medical Publications, 1963. $6.50).

REVIEW OF MEDICAL PHYSIOLOGY is designed to provide a concise and sophisticated review of medical physiology, dealing in considerable depth with both classical physiology and endocrine physiology. The chapter sections are divided, after the introduction, into "Physiology of Nerve and Muscle Cells," "Functions of the Nervous System," "Endocrinology and Metabolism," "Gastrointestinal Function," "Circulation," "Respiration," and "Formation and Excretion of Urine." The book, which is printed by photo-offset in two columns, is extremely readable and contains numerous informative line diagrams, many of which have been adapted for this publication from other recent papers.

There is a large amount of material correlating structure and function, including electron microscopy. Protein metabolism, fat metabolism, protein synthesis, and current concepts of endocrine problems including the metabolic abnormalities in diabetes are discussed. There is an informative short section, in the chapter on the "Development and Function of the Reproductive System," which diagrams the Watson-Crick concepts and discusses chromosomes in a concise fashion.

This publication should have extensive use as a review text for medical students or resident staffs. It also provides an unusual opportunity for the physician in practice to keep up with the latest concepts in medical physiology, which are very briefly presented with great clarity.

The paper binding has permitted publication at a reasonable price, and the price tag adds to the utility of the book.—*John W. Green, Jr.,* M.D.

THE MANAGEMENT OF THE ANXIOUS PATIENT, by *Ainslie Meares,* M.D. (Philadelphia, W. B. Saunders Company, 1963. $9.00).

In this book the author describes in detail his personal method of treating the anxious patient. The nature of anxiety and many of the common situations

that produce the anxiety are described. Brief references are made to some of the unconscious conflicts that are of importance. Chapters discussing the common syndromes with overt anxiety and the common phychosomatic syndromes complete the book.

The book may be easily skimmed for there are italicised headings for all major paragraphs. There often is as much information in the introductory phrase as there is in the paragraph that follows.

The author says this book is intended for the general practitioner, the student, and all those who have professional dealings with the anxious patient. To someone skilled in psychotherapy, this book would be of interest only because it is an account of an apparently successful approach to therapy. To the general practitioner or student unfamiliar with psychotherapy, the only portion of the book that would be useful is the section that describes the psychiatric interview.

The portion of the book that deals with theory cannot be recommended. Facts, theory and wild speculation are intermingled. Many psychiatric concepts are simplified to the point of absurdity. This dogmatic approach is useful in presenting guiding principles, but because the author fails to identify the generalizations and to discuss the exceptions to them, the book loses much of its value to the student.

The author presents his "atavistic theory of mental hemostasis" and attributes the beneficial effects of therapy to "atavistic regression." No solid basis is presented for this theory, and it fails to produce any great insight into or understanding of the therapeutic process. It is the author's own theory, and like many a proud parent, he seems to overestimate the worth of his offspring.

Because of its numerous defects, this book can be given only an apathetic recommendation.—*P. G. Couchman*, M.D.

MY CASE FOR FREEDOM, by *David A. Freed*, M.D. (San Antonio, The Naylor Company, 1962. $3.50).

This book is recommended to all who wish a clear, short review of the history of the development of the democratic government fostered by our Christian-economic philosophy. It presents the foundation of our form of government, both practically and theoretically, and outlines the virtues of the free-enterprise system.

The author's theme is that our democratic form of government is founded on the ethical codes and ideological goals of our Christian culture, which are applicable fundamentally to the individual. A just government with this foundation is, therefore, to be maintained for supplying needs, in order that individual man may gain and maintain his Christian-impelled liberty of choice and individual freedom.

The opening chapters of this book review the earliest forms of men's efforts to live together for mutual benefit, and so give a broad background for their more recent efforts to accomplish the same end. The evils, or inadequacies, of the many different systems are implied or stated, and their disappearance related to these injustices. Significant events which have resulted in changes in governmental forms are skillfully summarized.

This small volume concentrates a wealth of information on the struggle of the common man to be the least-governed, with the most benefit for his well-being. It represents a type and quality of scholarship in a field outside his profession seldom accomplished by a man of medicine. We are fortunate to have a man of such ability as a member of the Iowa Medical Society.—*Ralph E. Smiley*, M.D.

BOOKS RECEIVED

HANDBOOK OF PHYSIOLOGY, SECTION 2: CIRCULATION, VOLUME II, ed. by *W. F. Hamilton* and *Philip Dow* (Baltimore, The Williams & Wilkins Company, 1963. $32.00).

GUIDES TO PSYCHIATRIC REHABILITATION, ed. by *Bertram J. Black* (New York, Altro Health and Rehabilitation Services, Inc., 1963. $2.50).

Screening Test for Urinary Infections

A new screening agent designed to uncover the asymptomatic urinary infections which some scientists believe remain undetected in as many as 60 million people in the United States, has been introduced by the Knickerbocker Biologics unit of Pfizer Laboratories, a division of Chas. Pfizer & Co., Inc. Called Uroscreen, the test can be performed in any physician's office. It is designed to detect the presence of living bacteria at a level of 100,000 or more per milliliter of urine—the level usually regarded as evidence of infection. Once infection has been established, standard laboratory procedures are used to determine the infecting organisms.

Uroscreen is triphenyltetrazolium chloride, a reagent which precipitates and changes color in the presence of actively metabolizing bacteria. The Uroscreen test is conducted by adding 2 cc. of urine to a test tube containing the reagent. The test tube is then shaken to dissolve the reagent, and incubated at 37 degrees centigrade (body temperature) for four hours. If there are more than 100,000 bacteria per milliliter in the urine, the reagent will change to a pink-red precipitate of triphenylformazan. A colored precipitate must be present for a test to be considered positive. A colorless precipitate or a change in urine color to red-pink without precipitation is considered a negative reaction.

Uroscreen has three principal uses: to screen for asymptomatic infections; to confirm a tentative diagnosis of urinary infection; and to check the effectiveness of therapy after treatment. Since patients on effective antimicrobial therapy will often give a negative test result, the Uroscreen test should be performed no earlier than 48 hours after cessation of therapy.

Since the accuracy of Uroscreen is not affected by glucose, ketone bodies, or bilirubin in the urine, it is particularly useful for testing diabetics, hypertensives, or pregnant groups which are especially susceptible to urinary infections.

In a number of studies conducted with Uroscreen it was found to be accurate for bacterial counts above 100,000 per ml. in from 85 to 94 per cent of all cases tested.

Iowa Association of Medical Assistants

Handling the Mail

Is part of your work the receiving, sorting and opening of the daily mail? How do you know what to open and what not to open? Your doctor will have given you specific instructions regarding his preferences, but if there is any doubt in your mind about a particular letter, the best policy is to leave it for him to open.

First, organize the mail. Sort out the different classes, and open and place them for his attention in the order of their importance. There will be three main divisions in the mail—*professional,* concerning patients, colleagues and professional meetings; *business,* pertaining to supplies and equipment, and payments (either accounts receivable or payable); and *personal* correspondence.

Opened mail is arranged in order of its importance as follows:

1. Telegrams and special delivery letters
2. Airmail
3. Personal mail
4. Payments on account
5. Routine mail
6. Advertisements
7. Periodicals and newspapers

The doctor may want you to keep payments at your desk for crediting to patient accounts and for deposit at the bank. Compare the address on the check or the return address on the envelope with your records, to make sure that you have the correct, current mailing address. Sometimes patients take for granted that you know of such changes.

If your doctor does not want to see advertising material, he will tell you so and you can discard it in the preliminary sorting of mail. If he is a specialist, he may not be interested in samples and accompanying literature for other fields of medicine, e.g., geriatric products if he is a pediatrician. Or, he may prefer that all samples be put in a specified place in the office, other than on his desk.

Some correspondence may need a notation from you to help the doctor either in identifying the writer or in answering. Such notations may be clipped to the letter or pencilled on the margin for later erasure, or previous correspondence on the same subject or the same patient may be attached to expedite answering.

An insurance claim form or questionnaire should be entered in your registry and the patient's record pulled from the file and placed with it on your desk for attention later in the day, when time permits you to handle it.

Some letters you may be able to answer yourself—requests for immunization records, appointments for out-of-town patients, itemized annual statements for insurance or income tax purposes, etc. Your handling of this type of correspondence can save much of your doctor's valuable time.

Outgoing mail presents fewer problems, but it is important because it reflects either credit or discredit upon you and your doctor, not only by its appearance but also by the promptness with which incoming mail is answered. Letters should be neat, properly spaced and professional looking.

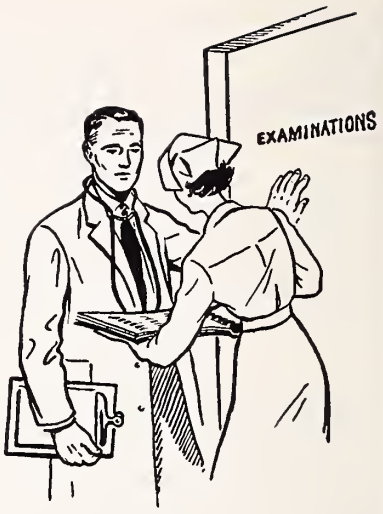
If the doctor is away on vacation, some of his mail may require attention before he returns. A note from you to the correspondent, stating that he is away and will answer upon his return, will be appreciated and will not indicate negligence in answering. If you have a forwarding address for him, send only those things that demand his immediate attention. He can then either take care of them himself, or return them to you with the necessary instructions.

From time to time, you may need specific information regarding the different classes of mail, postage rates, weight and size limitations for parcel post or express, and insurance and C.O.D. fees. This information is available, at home or work, in the directories distributed to customers of the Northwestern Bell Telephone Company.

For further reading and information on handling mail, both incoming and outgoing, may we suggest either of the following: IN THE DOCTOR'S OFFICE; THE ART OF BEING A MEDICAL ASSISTANT, by Esther Jane Parsons, published by Lippincott; or THE OFFICE ASSISTANT IN MEDICAL OR DENTAL PRACTICE, by Portia Frederick and Carol Towner, published by Saunders. Either of those two books, plus THE MEDICAL ASSISTANT, by Miriam Bredow, published by McGraw-Hill; and THE COMPLETE SECRETARY'S HANDBOOK, by Lillian Doris and Besse M. Miller, published by Prentice-Hall, Inc., would be excellent additions to the library of any medical assistant. The last of these is especially informative for secretaries.

—HELEN G. HUGHES

THE DOCTOR'S BUSINESS



The Keogh Law—Move Slowly!

HOWARD D. BAKER

Waterloo

Those of you who withstood attempts to stampede you into a retirement plan during the closing weeks of 1963 have a tremendous time advantage in working out your plans and putting them in force during 1964.

First of all, don't be misled into thinking otherwise! You need only to have your plan in force and to make contributions for yourself and your employees *by December 31, 1964.* As a matter of fact, it would be highly illogical for you to do so any earlier than next December.

If you adopt a plan on February 1, you will still be a pioneer and will sacrifice the benefit of experience and expert guidance. On the other hand, if you wait until December 1, you can profit by the experience of others and nevertheless will receive the same tax deduction!

Even now, rulings, bulletins and opinions are just starting to flow from the Treasury Department, clarifying those parts of the regulations which have been ambiguous and confusing. This process will continue until eventually the intent and the provisions of the law are reasonably clear.

For example, there has been a general consensus that contributions to the plan for employees and employer must represent the same percentage of their respective earnings. But a large insurance company is now contending that it need not. The insurance company maintains that contributions to the plan can be whatever percentage—a separate one for each employee and for the doctor—will produce a proportionate income for the beneficiary upon retirement. In other words, the annual contribution for a 25-year-old employee might be 5½ per cent, to provide her, at age 65, with a retirement income equal to 25 per cent of her average annual salary. To produce a comparable result for the doctor, whose current age is 49, might require a full 10 per cent contribution per year.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

This insurance company is seeking such a ruling at the present time, and if it succeeds in its effort, many doctors may not be required to contribute such large sums on behalf of their employees.

The question of investment medium is of paramount importance. Our company presently leans toward an equity-type investment, rather than toward bonds or annuities of a fixed-dollar nature. However, the provisions of each individual plan will influence even this decision. For example, it may be that you will be permitted to differentiate your contribution rate between employee and employer under a pension plan but not under a profit-sharing plan.

Another factor which might influence your plan is the fate of current legislative proposals. Both Representative Keogh and Senator Smathers introduced bills in 1963 to grant 100 per cent rather than just 50 per cent tax-deferment on owner contributions. We are unwilling to guess just when this change will come to pass, but we feel certain that favorable changes will be made in the law sooner or later.

We would not have you delay a plan beyond next year-end, in anticipation of such legislation, but we think it is only logical for you to delay until the end of 1964, since there will be no disadvantage and might possibly be a benefit in your doing so.

Your first step should be to make the mathematical test of the validity of a plan in your specific circumstances. If the economics appear favorable, estimate your annual payroll, take 10 per cent of that figure, and add it to your $2,500 contribution (for partnerships this should be $2,500 multiplied by the number of partners), and the sum of those amounts by 12. Start making monthly deposits of that size to a savings account for this purpose. By that means you can assure the availability of funds next December, and earn interest on the accumulation in the meantime.

If you are a partner, or if you anticipate form-

ing a partnership, the delay until next December is especially valid. The Internal Revenue Service has issued no approvals of corporate or association plans ("Kintner group arrangements") in the past four years. It has again announced that clarifying regulatons will be issued early in 1964. *If* these regulations are announced soon, the corporate or association approach may be more advantageous for you than the Keogh approach. By next December, we shall know more about this.

Finally, in deciding upon your plan, don't rely solely upon the salesmen of the concerns that are writing plans. Whether it be a commercial firm or a professional organization, each of these groups is going to be prejudiced in favor of its plan. Bring in a neutral third party to study your situation and the proposals which you are considering. Your attorney and your management consultant or accountant should each have the objectivity to provide you some valuable assistance in this area.

An important word of caution is warranted in connection with your choice of plan. The approval of master or prototype plans will greatly simplify the details of qualifying your arrangement for tax-deferment, but there is a hazard in your having a plan that is a stereotype designed more or less to fit thousands of doctors.

Many of the initial application forms for participation in master plans do not provide for such variables as voluntary contributions, for omissions or reductions of the contribution if income falls below a certain level, or for variation in the contribution rate from year to year so that you can coordinate your changing income with the maximum allowable deduction of $2,500. These all are areas where personalized arrangements and specific consultations are necessary.

Remember that you are going to have only one plan, and that once established, it will be in force for many years. Choose your plan with the same care that you would use in choosing a wife.

If you study all available literature, consult objective experts, move slowly and set aside sufficient funds, you will be much better prepared next December to initiate your plan.

Sioux Valley Medical Association

The annual meeting of the Sioux Valley Medical Association will be held on February 19-21 at the Cataract Hotel and the Sioux Valley Hospital, in Sioux Falls, South Dakota.

The program begins on the evening of February 19, with a smoker and hospitality hour. On the morning of February 20, there are to be clinics at the Hospital, and for the afternoon of that day and all day on February 21, symposia have been arranged. A Northwestern University group consisting of internists, surgeons, pediatricians and gynecologists will discuss the nature and use of cytotoxins; a second group from Creighton University will take up the diagnosis and treatment of thyroid disease; and a third group from the Mayo Clinic will speak on acute rheumatic fever and rheumatic heart disease.

Additional information can be secured from H. E. Rudersdorf, M.D., secretary of the Sioux Valley Medical Association, 2417 Pierce Street, Sioux City.

Annis Urges Doctors to Join World Medical Association

With the words "This is your international organization of private medicine as distinguished from the intergovernmental World Health Organization" Dr. Edward R. Annis, president of the American Medical Association, appealed to members of the American medical profession to support The World Medical Association through active membership in The World Medical Association, United States Committee.

Speaking before the AMA House of Delegates during the AMA Clinical Session in Portland, Oregon, Dr. Annis, who is also president of The World Medical Association, told of how The World Medical Association is the only private organization officially recognized to represent private medicine on an international level. "Through this representation" he stated, "our own free practice of medicine here in the United States is protected."

Dr. Annis pointed out that by exchange of information and ideas in medicine, The World Medical Association brings together national medical associations representing practicing physicians in 58 countries of the world. The World Medical Association, he noted, maintains a vital role in future planning against disease and in the care of the peoples of the world. As a result, there is better understanding among physicians in the free medical world today.

Physicians in this country, said Dr. Annis, are fortunate to have a means to affiliate directly with The World Medical Association by joining the WMA, U. S. Committee, Inc. Programs and services of the U. S. Committee are of interest and value to every physician in this country and help to accomplish the objectives and goals of The World Medical Association. Membership allows direct participation in several information exchange programs, such as the doctor-to-doctor medical journal exchange, and provides personal contacts with medical counterparts in fifty-eight countries of the world.

United States Committee annual membership dues of $10 are tax-exempt. Dues should be made payable and sent to: The World Medical Association, United States Committee, Inc., 10 Columbus Circle, New York, N. Y. 10019.

STATE DEPARTMENT OF HEALTH

RALPH H. HEEREN, M.D., ACTING COMMISSIONER

Morbidity Report for Month of November 1963

Diseases	1963 Nov.	1963 Oct.	1962 Nov.	Most Cases Reported From These Counties
Diphtheria	0	0	1	
Scarlet fever	257	155	198	Jefferson, Johnson, Kossuth, Polk
Typhoid fever	0	1	0	
Smallpox	0	0	0	
Measles	37	34	295	Buena Vista, Dubuque, Polk, Scott
Whooping cough	8	12	7	Des Moines, Scott
Brucellosis	7	9	3	Johnson
Chickenpox	135	39	303	Clay, Des Moines, Dubuque, Polk, Woodbury
Meningococcic meningitis	0	0	2	
Mumps	709	374	86	Dubuque, Mills, Polk, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	19	40	29	Cass, Monona, Polk, Scott, Tama
Rabies in animals	24	19	9	Boone, Bremer
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	25	24	23	For the state
Syphilis	52	73	65	For the state
Gonorrhea	103	103	102	For the state
Histoplasmosis	1	1	5	Wright
Food intoxication	25	0	0	Woodbury (probably bacterial; organism not identified)
Meningitis (type unspecified)	3	2	2	Clinton, Hancock, Linn
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	1	
Salmonellosis	4	4	3	Dubuque, Linn, Polk, Scott
Tetanus	2	1	3	Davis, Hardin
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	2	0	
H. influenzal meningitis	0	0	0	
Amebiasis	6	1	13	Appanoose, Boone
Shigellosis	6	10	1	Polk
Influenza	318	40	0	

Follow-Up Study on Diphtheria in Sioux City

Last September, Iowa was startled by the report that 12 cases of diphtheria had occurred within one small residential area in Sioux City. With the report of the first case, on September 21, 1962, the Sioux City Health Department swung into immediate action. It very quickly realized that it was faced with a major public health problem, and called upon the State Department of Health and the State Hygienic Laboratories for help. Later, the U. S. Public Health Service Communicable Disease Center in Atlanta, Georgia, also responded to a request for help and sent personnel to the area.

As a part of the control program, all staff members and pupils in the three schools in which the sick youngsters were enrolled were checked thoroughly by means of nose and throat cultures. Of 1,252 students in those three schools, 54 were found to be carriers. All persons, whether school or family contacts, who had been found to have positive nose or throat cultures were held under observation and treated medically until negative release cultures had been obtained.

When it became evident, in mid-October, that the infection had been brought under control, the work group at Sioux City decided to run similar cultures on personnel at three other schools in which no cases or family contacts of cases had been in attendance. That study, it was felt, would tell health authorities to what extent diphtheria carriers were spread throughout Sioux City. A total of 3,721 students in the three control schools were checked. No cultures were found positive for diphtheria.

As a final check upon the effectiveness of the procedures that had been employed in finding and treating carriers, it was decided that a year later, in October, 1963, another series of cultures would be run to determine the per cent of carriers in the three schools the sick youngsters had attended. That check has just been completed, and of about 1,000 cultures run, all were found to be negative. These findings definitely indicate that last year's work in Sioux City, at the time of the outbreak, was adequate and accurate. It also shows that the carrier rate of all persons in the area is low enough so that the school population freed from infection has not reseeded within a 12-month period.

Sioux City is probably one of Iowa's highest ranking cities as regards percentage of immunized children.

This work has been summarized for the purpose of demonstrating that health workers in the state are constantly alert for serious infections. Not only do we think of detecting infection during its presence and preventing its recurrence, but we are constantly working to measure the efficiency and the value of our past efforts.

U. S. Salmonella Surveillance Summary*

April, 1962-March, 1963

An intensive salmonella surveillance program was instituted in April, 1962, when six states and eight salmonella serotyping laboratories first began submitting monthly reports of salmonella isolates to the USPHS Communicable Disease Center. By the end of 1962, 22 states and 24 serotyping laboratories were reporting isolates monthly.

Since January, 1963, the 50 states, the Virgin Islands, the District of Columbia and the National Animal Disease Laboratory at Ames, Iowa, have been reporting salmonella recoveries from human and non-human sources on a weekly basis. During the period from April 1, 1962, to April 1, 1963, 9,717 human and 3,078 non-human recoveries of salmonella were reported.

Although 104 different serotypes were isolated from human beings during this 12-month period, only 12 of these strains accounted for 78 per cent of the total number of isolates (see table). Of those dozen strains, one, S. typhimurium, accounted for 40 per cent of the total isolates.

Salmonella infections occurred in greatest numbers among pre-school children. This distribution pattern remained essentially constant throughout the 12-month period.

Thirty-two outbreaks attributable to salmonella were investigated during the 12-month period. In 10 of them (31 per cent), S. typhimurium was incriminated as the etiologic agent. S. newport caused three outbreaks. Each of six other serotypes was responsible for two separate outbreaks: S. muenchen, S. heidelberg, and S. typhi and S. paratyphi B., S. thompson and S. st. paul. A different serotype accounted for each of the seven remaining outbreaks that were investigated: S. hartford, S. tennessee, S. infantis, S. chester, S. javiana, S. give and S. enteritidis.

The average number of persons afflicted in each epidemic was 71, and the range was from three to 495. In 14 of the 32 epidemics reported, poultry, eggs and other poultry products were either highly suspect or incriminated as the source of the salmonella infection, and eight epidemics were due to other sources such as food handlers, cake mixes, home-made ice cream, artesian well water, and roast beef and ham sandwiches. In 10, the source was unknown. Thus, of the 22 known outbreaks for which the source of infection could be determined, 64 per cent were traced to poultry or poultry products.

COMPARATIVE FREQUENCY OF HUMAN AND NON-HUMAN SALMONELLOSIS

In non-humans, as in human beings, a small number of serotypes cause the majority of salmonella infections. The 12 most frequently recovered strains, while representing only 15 per cent of the 81 different types isolated, accounted for 65 per cent of all reported recoveries of salmonella in non-humans during this period.

Of the 3,078 non-human isolates of salmonella, 1,612 (52 per cent) were from fowl, and 1,023 (33 per cent) were from other animal sources. Of the remaining, 443,186 were from animal feeds and fertilizers, 130 from human foods, 10 from reptiles, and 114 from other sources.

There is a striking similarity among the 12 most common serotypes isolated from both human beings and non-humans. S. typhimurium and S. heidelberg are the two most frequent isolates on both lists.

All but four of those most commonly causing human infection appear on the list of the 12 most common non-human isolates. And, of the nine most common human serotypes, all but one (S. enteritidis) comprise the most common non-human isolates.

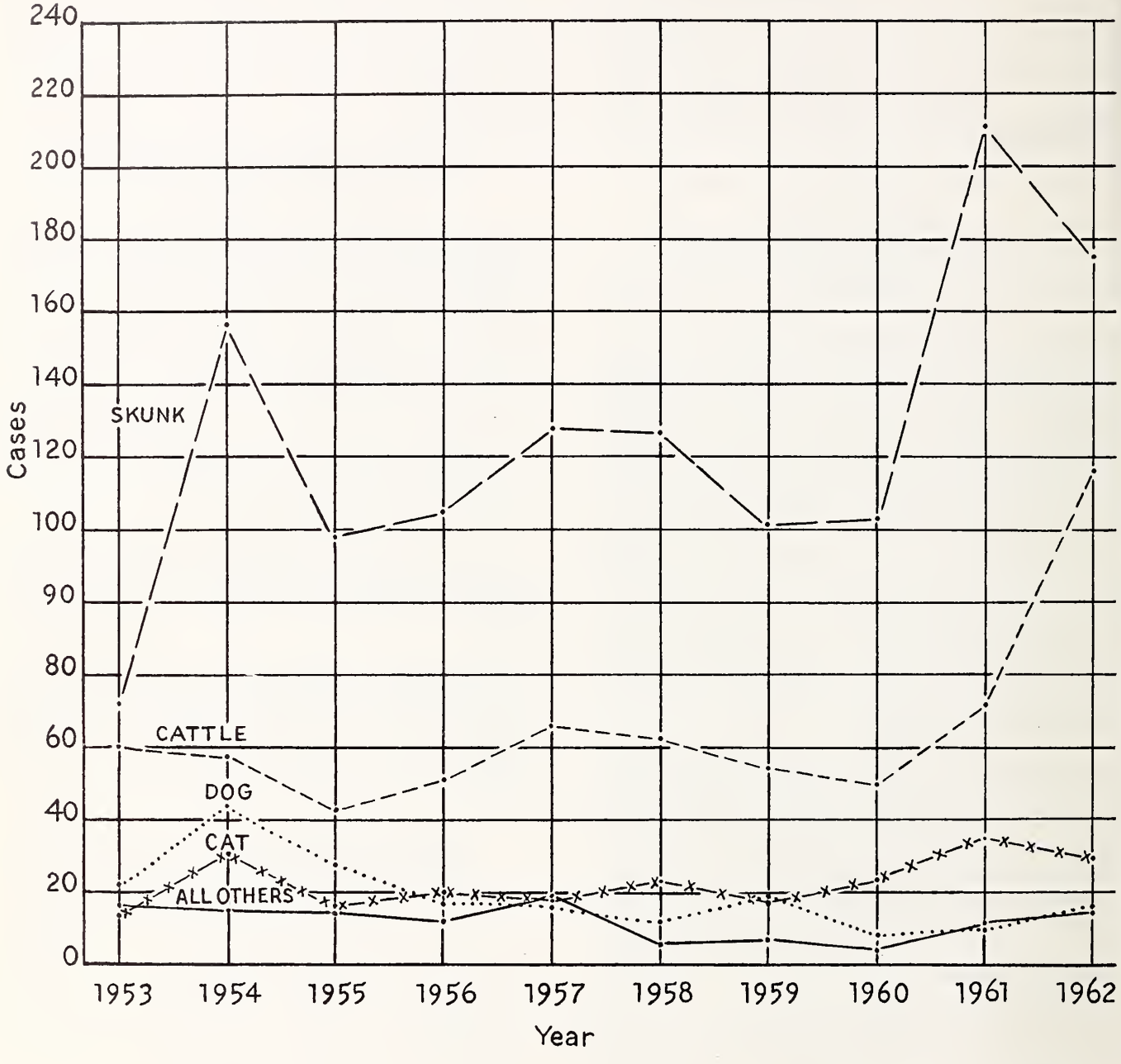
THE TWELVE MOST PREVALENT SALMONELLA SEROTYPES IDENTIFIED FROM HUMAN AND NON-HUMAN SOURCES IN THE UNITED STATES
April 1, 1962-April 1, 1963

Serotypes	Human	Serotypes	Non-Human
S. typhimurium	3,851	S. typhimurium	731
S. heidelberg	697	S. heidelberg	185
S. newport	662	S. anatum	168
S. infantis	570	S. cholerae suis	168
S. enteritidis	344	S. infantis	123
S. saint paul	298	S. montevideo	118
S. montevideo	242	S. derby	112
S. derby	200	S. saint paul	110
S. oranienberg	199	S. oranienberg	84
S. blockley	199	S. bredeney	83
S. thompson	179	S. newport	69
S. muenchen	152	S. schwarzengrund	63
TOTAL	7,593		2,014
OTHER TYPES (82)	2,124	(69)	1,064
GRAND TOTAL	9,717		3,978

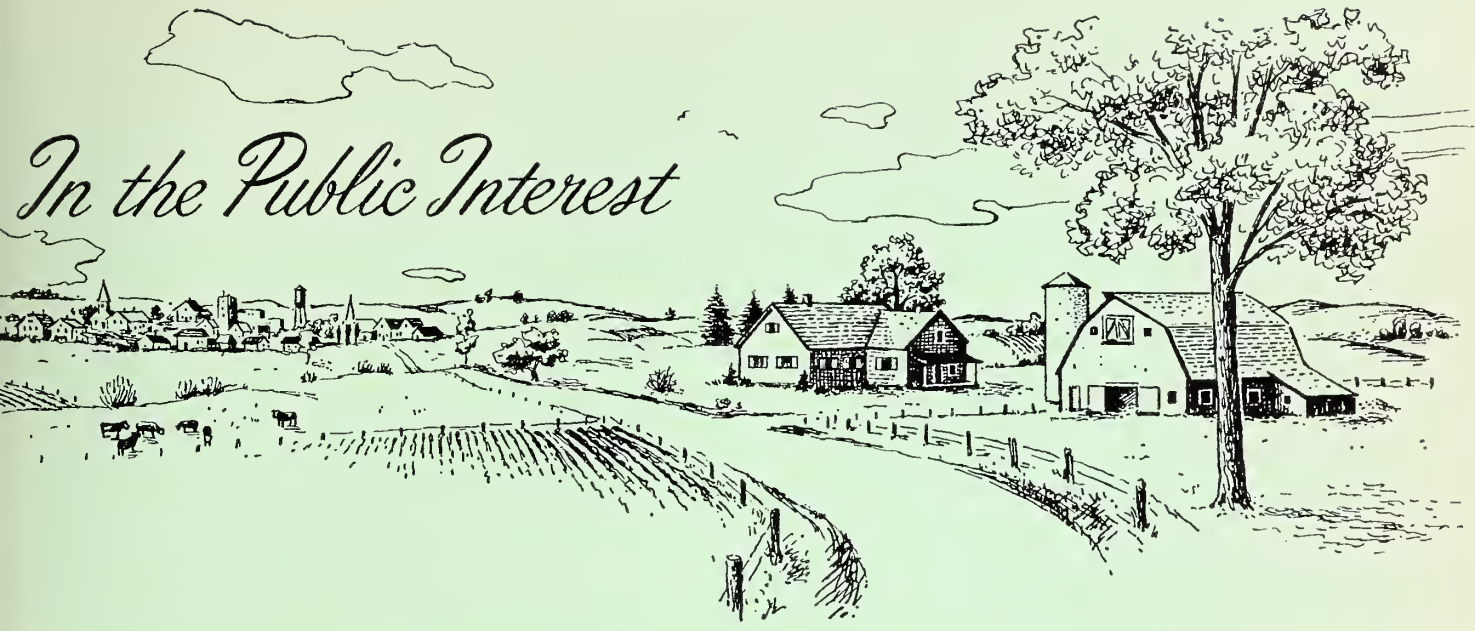
*MORBIDITY AND MORTALITY WEEKLY REPORT, Communicable Disease Center, U. S. Public Health Service, Vol. 12, No. 42, October 25, 1963.

TEN YEAR RABIES SUMMARY

Reported Rabies in Animals in Iowa by Year and by Species



Species	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Total	% of 10-Year Total
Dog	22	44	28	17	16	12	19	8	10	16	192	7.8
Cat	14	31	16	20	18	23	18	24	35	30	229	9.3
Cattle	60	58	43	51	66	62	55	50	72	116	633	25.7
Skunk	72	157	98	105	128	127	101	103	221	175	1,287	52.3
All Others	16	15	15	12	19	6	7	4	11	15	120	4.9
Total	184	305	200	205	247	230	200	189	349	352	2,461	



All Health and Welfare Personnel Can Use the

IMS Handbook of Resources Available to Physicians

The Iowa Medical Society has now mailed a copy of the revised edition of its HANDBOOK OF RESOURCES AVAILABLE TO PHYSICIANS to each of its member doctors, and is making copies available to all of the other people who are concerned, either as professionals or as interested citizens, with the policies and procedures of Iowa health and social work agencies, and with the rules that control them.

Whether the book proves valuable or not will depend upon how thoroughly the recipients familiarize themselves with it, and upon whether they keep it handy for ready reference.

This 220-page, cloth-bound volume has two main parts. The first of them consists of presentations, in an almost unvarying outline form, of essential data on more than 100 private and public agencies that can be called upon for assistance in a wide range of problems—alcoholism, blindness, mental retardation or mental illness, marital discord, illegitimate pregnancy, physical deformity, vocational rehabilitation, and financial hardship, to mention just a few.

The second principal section contains brief but comprehensive summaries of Iowa laws or regulations governing most health and social work activities. Among these topics are such ones as the securing of permission for autopsy, procedures for obtaining marriage licenses in Iowa and other states, the powers and duties of local health officers, medicolegal pitfalls and ways of avoiding them, narcotics regulations and reports of communicable disease cases.

Generally speaking, the write-ups both of the agencies and of the laws and regulations are alphabetically arranged under each of several headings, for ease of reference, but the book also has a table of contents and a thorough index. The copy that has been sent to each physician is a perquisite of his IMS membership. The price to nonmembers is $3 per copy, or $2.50 per copy in quantities of 25 or more—amounts which cover printing costs, but by no means recompense the Society for the staff time and other expenses incident to the gathering, editing and verifying of the materials that the book contains.

ITS VALUE IN EACH DOCTOR'S OFFICE

The principal purpose of the book, of course, is to enable physicians and their office nurses and secretaries to secure needed and available services for patients, and to conform with all of the rules and regulations with which the practice of medicine has been hedged about. Even the physicians, nurses and secretaries who have lived and worked in Iowa for many years may not be completely familiar with all of the state's health and social work resources, for Iowa's facilities, like Harriet Beecher Stowe's Topsy have "just growed" and reflect a long succession of plans and patterns, or in some instances an absence of them. And even people who are wells of miscellaneous information

may be a bit vague regarding details—about the procedures that must be followed in sending a medically indigent patient to University Hospitals at county expense; about the newly broadened criteria for admissions to the University Hospital School (formerly known as the Hospital School for Severely Handicapped Children); about the immunizations that someone should have before traveling to Asia; and about the names and addresses of agencies offering financial help to patients of various sorts.

Doctors who are new to Iowa or to the practice of medicine, and physicians' employees who have previously visited doctors' offices only as patients, can benefit particularly by studying this volume. From it, new medical assistants can learn the doctor's role in relation to the various branches of government and his place in the community, thus making themselves more comfortable in their work. The new or recently relocated doctor can learn from it the types of deaths on which the county medical examiner must pass; where he can get information immediately on the constituents of commercial products involved in accidental poisonings; the Iowa child-placement and adoption procedures; and a host of other matters for which his medical education and/or his experience elsewhere may not have prepared him.

A CARD INDEX SHOULD SUPPLEMENT THE HANDBOOK FROM THE OUTSET

The HANDBOOK wasn't intended to be exhaustive, and thus it should be supplemented in various ways. Because other publications are readily available and are quite adequate, it does not contain a list of general hospitals (though it has an officially approved summary of the accreditation requirements of the Joint Commission on Accreditation of Hospitals, and data on general hospitals that have psychiatric wards or beds); and it includes no list of nursing and custodial homes (though it does contain those of the nursing-home rules and regulations that are likely to be of most interest to health personnel). No doubt there have been some inadvertent omissions, as well, although every effort was made to include all agencies and data not easily accessible elsewhere, as well as to have all information checked and approved by knowledgeable and responsible officials.

Miss Helen G. Hughes suggested, on the Iowa Association of Medical Assistants' pages in the December JOURNAL, that a card file should be set up and kept current in each doctor's office, containing strictly local information on sources of sickroom equipment; names and addresses of nursing and custodial homes in the immediate vicinity, together with details about the care available at each; and the doctor's own policies about the timing of the immunizations and other matters on which his assistants are allowed to answer questions. As the months pass, and as the HANDBOOK inevitably grows out-of-date, the book should be annotated in pen and ink, and additions or corrections for it should be written up and put into the card file.

NON-MEDICAL PEOPLE WILL FIND THE BOOK VALUABLE

Not only physicians and their assistants, but everyone else who advises Iowans on personal or family problems should have ready access to the IMS HANDBOOK OF RESOURCES AVAILABLE TO PHYSICIANS. Social workers and public health nurses should have just as frequent uses for it, since it contains summaries of the services, the eligibility requirements and the application procedures for all of the current federal-state aid programs, lists of nurseries and day-care centers now in operation, and digests of the laws in which they are particularly interested.

Clergymen—particularly hospital chaplains—should study it for the help it will give them in answering many of the questions that are asked of them by people in trouble. One of the ways for county medical societies or individual physicians to facilitate cooperation between medicine and the clergy might be to make presents of copies of the book to the ministers and priests with whom they have most frequent contacts.

Civic leaders at the community level should have access to the HANDBOOK—perhaps on the reference shelves of each public library in the state—so that they can familiarize themselves with health and social work facilities or services operating elsewhere in Iowa, but not in their particular towns. Legislators and other state officials can use it in searching out the remaining gaps in Iowa health and social work facilities or services as a whole.

The preparation of this book has been a laborious project, and the officers and staff of the Iowa Medical Society would like to enlist every physician's help in publicizing it and in making sure that it is used to the fullest extent.

Iowa Chapter of the American Academy of General Practice

Ninth Annual Refresher Course

The Ninth Annual Refresher Course for General Practitioners will be held at University Hospitals, in Iowa City, February 18 through 21. Twenty-nine hours of credit will be allowed Academy members for attendance at the full session. The registration fee for Academy members is $10 for the full course or for one day. For non-members, the fee is $40 for the full course, or $15 per day. Luncheon tickets are included in the non-member fee, but AAGP members must purchase tickets for their lunches in the doctors' dining room.

As usual, on Thursday night, February 20, members of the Iowa Chapter of the AAGP will be hosts to the sophomore and junior medical students and the participating faculty members at a social hour and banquet in the Elks Club. Marion Laboratories and their representative will again supply their wonderful oysters on the half-shell and beer. The speaker of the evening will be Mr. Emmett F. Butler, public-relations representative of the Maytag Company, Newton, and his subject will be "Your Public Relations Are Showing."

PROGRAM

Tuesday, February 18

MEDICINE

9:00 a.m. "Interpretation of Measurements of Venous Pressure and Circulation Time," J. W. Eckstein, M.D.

9:20 a.m. "Diagnosis and Treatment of Atrial Arrhythmias," D. L. Warkentin, M.D.

9:40 a.m. PANEL: Thrombophlebitis: Medical and Surgical Treatment
W. E. Connor, M.D., Moderator
J. C. Hoak, M.D.
M. S. Lawrence, M.D.

11:00 a.m. SMALL GROUP CONFERENCES
DERMATOLOGY—Informal Open Discussion—R. G. Carney, M.D.
OPHTHALMOLOGY—"Eye Injuries"—F. C. Blodi, M.D.
ORTHOPEDICS—"Fractures of the Hand"—A. E. Flatt, M.D.
OTOLARYNGOLOGY—"Deafness: Its Diagnosis and Treatment"—J. A. Donaldson, M.D.
PSYCHIATRY—"Office Management of Alcoholic Patients"—John Clancy, B.Ch.
UROLOGY—"The Diagnosis and Management of Infertility"—R. G. Bunge, M.D.

1:30 p.m. Nutritional Problems in Pregnancy," W. A. Krehl, M.D.

1:50 p.m. "Starvation as a Treatment for Obesity," W. B. Galbraith, M.D.

2:10 p.m. "The Diabetic Foot," P. D. Robertson, M.B.

2:30 p.m. "Natural History of Respiratory Allergic Disease; Its Relationship to Therapy," J. Montgomery Smith, M.D.

2:50 p.m. "Medical Management of Bronchogenic Carcinoma," D. T. Kaung, M.D.

3:30 p.m. "Gastric Freezing—Yes or No?," K. A. Hubel, M.D.

3:50 p.m. "New Tools for the M.D. for Teaching the Patient His Modified Diet," Margaret A. Ohlson, Ph.D.

4:10 p.m. PANEL—Differential Diagnosis of Bone Marrow Failure
H. E. Hamilton, M.D.
R. F. Sheets, M.D.

Wednesday, February 19

PEDIATRICS

9:00 a.m. "Recent Growth and Development of Your Department of Pediatrics," Donal Dunphy, M.D.

9:15 a.m. "Practical Use of Antibiotics in Private Practice," E. H. Townsend, M.D., Rochester, New York.

10:00 a.m. "Is the Murmur Innocent?," Peter Vlad, M.D.

10:15 a.m. "Headaches in Children," W. E. Bell, M.D.

11:00 a.m. SMALL GROUP CONFERENCES
DERMATOLOGY—Case Presentation—C. E. Radcliffe, M.D.
OPHTHALMOLOGY—"Eyes in General Disease"—P. J. Leinfelder, M.D.
ORTHOPEDICS—"Backache"—C. B. Larson, M.D.
OTOLARYNGOLOGY—"Malignant Lesions of the Head and Neck"—D. A. Shumrick, M.D.
PSYCHIATRY—"Management of Common Emotional Problems in Children"—R. L. Jenkins, M.D.
UROLOGY—"Acute Renal Failure: Diagnosis and Management"—D. A. Culp, M.D.

1:30 p.m. THE CHILD COMPLAINS OF PAIN IN THE ABDOMEN
J. C. MacQueen, M.D., Moderator
R. T. Soper, M.D.
V. N. Rowley, Ph.D.

2:30 p.m. THE CHILD LOOKS PALE
J. C. Taylor, M.D.

2:45 p.m. IS THE CHILD ALLERGIC TO COW'S MILK, AND, IF SO, WHAT SHOULD I DO?
S. J. Fomon, M.D.

3:15 p.m. "Office Management of Behavioral Problems of Children," E. H. Townsend, M.D.

3:45 p.m. "Rashes in the Diaper Area," Gerald Solomons, M.D.

4:00 p.m. "Care of Prematurely Born Infants in 1964," Donal Dunphy, M.D.

4:30 p.m. Questions and Answers

8:00-9:30 p.m. Legal Responsibilities of a Physician
Carroll B. Larson, M.D., Moderator
Mason Ladd, Dean, College of Law
Samuel M. Fahr, Professor, College of Law

Thursday, February 20

SURGERY

7:30 a.m. Operative clinic via TV

9:00 a.m. Questions and Answers Regarding the TV Clinic, R. T. Tidrick, M.D., and Staff

9:40 a.m. THE PRESENT STATUS OF THERAPY OF ADVANCED CANCER WITH SPECIAL REFERENCE TO BREAST CANCER
M. S. Lawrence, M.D., Moderator
R. D. Liechty, M.D.—Hormonal Alteration
R. L. Lawton, M.D.—Chemotherapy
H. B. Latourette, M.D.—Irradiation

11:00 a.m. SMALL GROUP CONFERENCES
DERMATOLOGY—Ano-genital Pruritus: Open Discussion—R. M. Caplan, M.D.
OPHTHALMOLOGY—"Cross-Eyed Children"—H. M. Burian, M.D.
ORTHOPEDICS—"Congenital Leg Defects"—I. V. Ponseti, M.D.
OTOLARYNGOLOGY—"Problems in Endoscopy"—E. N. Rise, M.D.
PSYCHIATRY—"Management of the Psychoneurotic Patient in Medical Practice," J. S. Ward, M.D.
UROLOGY—"The Palliative Treatment of Urological Malignancies," R. H. Flocks, M.D.

1:30 p.m. CURRENT THERAPY OF COMMON SURGICAL PROBLEMS
"The Superficial Infections"—S. E. Ziffren, M.D.
"Varicose Veins and Leg Ulcers"—J. A. Gius, M.D.
"Ano-rectal Conditions"—E. S. Brintnall, M.D.
"Examination of the Comatose Patient"—F. M. Skultety, M.D.
"Hernia in Infants and Children"—R. T. Soper, M.D.

3:30 p.m. CURRENT CONCEPTS OF SURGICAL CARE
H. B. Locksley, M.D., Moderator
E. E. Mason, M.D.—"Shock and Hemorrhage"
W. K. Hamilton, M.D.—"New Findings in Atelectasis"
J. L. Ehrenhaft, M.D.—"The Direction of Cardiac Surgery"
J. A. Buckwalter, M.D.—"New Adjuncts to Operative Surgery"

6:00 p.m. Social Hour and Dinner—
Elks Club, 525 E. Washington St.
Speaker: Mr. Emmett F. Butler
Maytag Company, Newton

Friday, February 21

OBSTETRICS AND GYNECOLOGY

9:00 a.m. "Bleeding in the First Trimester," J. P. Jacobs, M.D.

9:30 a.m. "Just an Ovarian Tumor," W. C. Keettel, M.D.

10:00 a.m. "Use of Oxytocic Drugs in the Management of the Third Stage," W. F. Howard, M.D.

10:25 a.m. "Intravenous Analgesia in Obstetrics," C. A. White, M.D.

11:00 a.m. SMALL GROUP CONFERENCES
DERMATOLOGY—"Acne; Minor Office Surgery"—C. E. Radcliffe, M.D.
OPHTHALMOLOGY—"Corneal Surgery and Eye Banks"—A. E. Braley, M.D.
ORTHOPEDICS—"Infections of Bones and Joints"—Michael Bonfiglio, M.D.
OTOLARYNGOLOGY—"Plastic Surgery"—W. C. Huffman, M.D.
PSYCHIATRY—"Management of Psychiatric Emergencies"—H. L. Nelson, M.D.
UROLOGY—Pediatric Urologic Problems—Cases Presenting Problems in Diagnosis and Treatment
R. H. Flocks, M.D.
R. G. Bunge, M.D.
D. A. Culp, M.D.

1:30 p.m. "Term Breech," L. J. Dunn, M.D.

2:00 p.m. "Dead Fetus Syndrome," C. P. Goplerud, M.D.

2:30 p.m. THE PREGNANT DIABETIC
"Obstetrical Complications"—R. M. Kretzschmar, M.D.
"Medical Management"—D. B. Stone, D.P.M.
"Neonatal Complications"—C. H. Read, M.D.

3:30 p.m. "Problems of Obstetrical Care in the Small Community Hospital," Madelene M. Donnelly, M.D., Des Moines

3:50 p.m. "Tired Mother Syndrome," A. S. Norris, M.D.

4:15 p.m. "Now What Do I Do?," W. C. Keettel, M.D., and Staff
ROUND TABLE DISCUSSION

Woman's Auxiliary News

The "Barnstormer" Comes to Iowa

Do you know your community's political score, the structure of your political party, how the precinct organization functions, the four main factors that win an election? These and many other questions are answered by AMPAC's political education film called the "Barnstormer." The film, winner of the Chris Award at the Ohio Film Festival, will soon be shown in 16 Iowa Cities to physicians and their wives.

Make plans now to attend the showing of the "Barnstormer" in your area. Invitations giving the time and place of each meeting will be mailed to physicians and their wives. Being effective in politics is essential to the medical profession, and the physician's wife is her husband's greatest asset in the political arena. The enthusiasm, determination and know-how of women in winning an election is recognized by all political candidates.

You and your husband can make your voice heard in politics. Make a date to attend the "Barnstormer."

Call your county medical society for information on the date of the meeting scheduled for your district.

AAPS Essay Contest

Materials have been mailed to each county Auxiliary for distribution to the high schools that are participating in the Essay Contest. The topics again are: "The Advantages of Private Medical Care" or "The Advantages of the American Free Enterprise System Over Communism." At the national level, 14 prizes totaling $2,675.00 are being offered. The state prizes are: 1st prize $100.00, 2nd prize $50.00, and 3rd prize $25.00. Many of the county medical societies are cooperating with substantial prizes at the local level.

If you have not given your superintendent or high school principal the material that your group was sent, or if you need additional follow-up material, please contact the IMS Auxiliary headquarters office in Des Moines.

Iowa has had winners at the national level in the past, and it is hoped that this 18th Annual National Essay Contest will count Iowa among its winners.

"Even on Sunday"

U. S. Chamber of Commerce president Edwin P. Neilan resumed his campaign for a higher degree of morality in federal-citizen relations during mid-December in a speech to the Economic Club of Detroit. His title: "Even on Sunday (Seduction by Subsidy Goes on as Usual)."

In his speech, Mr. Neilan, who is chairman of the board of the Bank of Delaware, Wilmington, reiterated his belief that it is wrong to use federal programs to buy or sell votes. He made this point:

"The Executive and Legislative branches of our national government frequently seem to be at war with each other, but they manage to submerge their differences when it comes to dispensing tax money. They have no real quarrel over the political power of a dollar; their only dispute is over where it will be distributed and who gets the credit.

"Right now, they are spending our money at the rate of $106 billion a year, $200,000 a minute, around the clock. Weekdays, holidays, even on Sunday, this seduction by subsidy goes on endlessly, as subsidized crops grow day and night; subsidized airline passengers fly from sun-up to sun-up; while our public housing tenants sleep on subsidies, and our subsidized ships ply the oceans in every time zone—on everybody's Sunday—except when there's a strike.

"And the voters love it, because they think it's all free!"

Health Education Loan Fund

It is not too early to begin work on your plans for the annual requests for loans from this Auxiliary fund. As you know, this fund is used to assist high-school graduates toward health careers through loans. Contact Mrs. E. A. Larsen, 323 Oak Street, Centerville, for information. The fund is committed for the current year, but it is not too early for 1964 graduates who know they will need assistance to file applications.

Health Careers Clubs

"If you really want a career in medicine, don't let anyone talk you out of it," was the advice which Dr. Kenneth Gee offered the members of

the Future Nurses' Club in Shenandoah at a recent meeting. Dr. Gee described the training of physicians, the medical fields which this training prepares them for, and the good and bad points in the life of a doctor.

Dr. Gee also presented a film entitled "I am a Doctor," as a portion of the program, and distributed pamphlets concerning the future of medicine and the opportunities it provides young people.

Mental Health Is the Auxiliary's Business

Members are asked to affiliate with local mental health groups and participate in community activities pertaining to mental health. Anyone interested in promoting the emotional stability of young people may assist through PTA groups, parents' leagues, church groups, civic organizations, youth groups, social agencies, all of which are concerned with such problems as juvenile delinquency, teenage drinking, early marriage, school drop-outs. Mental health is an all-encompassing field which touches upon virtually every aspect of community life. Mental health chairmen are being asked to work in close cooperation with chairmen of other service committees. A mental health project may have an even greater impact if it is combined with established related activities. Aside from working with other community groups interested in mental health and mental illness the Auxiliary committees on Program, Rural Health, Safety, Health Careers and Legislation will find many areas of cooperation where, through teamwork, duplication of effort can be avoided.

A mental health program must necessarily be comprehensive. It should touch on every aspect of our daily lives, since our mental well-being cannot be removed from our physical health. Community activities, family and social ties, work and recreation, are never carried out independently. Our lives are inextricably involved with those of our fellow men.

The National Auxiliary has inaugurated a new, far-reaching program on suicide prevention. It has the approval of the AMA Council on Mental Health, and the Auxiliary has been asked to give it major emphasis. The suicide prevention project must be carried out on the local level and is a wonderful avenue of service to the community. Where the program has been activated, police officials have been very cooperative and have welcomed citizen interest and participation in this aspect of their work. The project, like any other, must be cleared with your county medical society, but it doubtless will be cooperative when the project has been explained.

For information on any of the mental health programs, write to Mrs. B. R. Goldman, 2140 Fairhaven Road, Davenport, Iowa, the chairman of the State Auxiliary's Committee on Mental Health. She will answer your inquiries promptly.

Since all are interested in the prevention of mental illness, and since prevention begins with youth, you are urged to increase your community's use of the MILESTONES series of letters available from the Woman's Auxiliary office in Des Moines. These have been proved helpful to guidance counselors, instructors in family life classes, ministers and others who work with young people.

Mental health is everybody's business, and it is certainly the Auxiliary's business.

COUNTY AUXILIARIES

Boone

The Boone County Medical Auxiliary, meeting in November, elected the following officers for 1964: President, Mrs. W. H. Longworth; Vice President, Mrs. A. W. Puntenney; Secretary, Mrs. M. G. Sloan; Treasurer, Mrs. G. H. Sutton.

The Health Careers committee reported on the tea given in October for the Boone County girls interested in health careers as well as on the Conference for Future Nurses' and Health Careers Clubs in the central area. The Conference held at Webster City was attended by four members of the Boone High School Future Nurses' Club and Mrs. Longworth representing the auxiliary.

Mrs. Sloan, the program chairman, introduced the speaker, Mrs. Ednamay Erbe, dietitian for the Boone County Hospital, who outlined the work of her department in the hospital.

Polk

The Polk County Auxiliary again sponsored a Christmas card project with success. Proceeds from this project, which has had the support of the Polk County Medical Society Executive Council, are contributed to various worthy causes. In past years these funds have been used to purchase equipment for the Des Moines Speech and Hearing Center as well as for AMA-ERF. The major portion of the 1963 proceeds were contributed to the American Medical Association Educational and Research Foundation for the support of its student loan and medical research programs.

A further report will be published in a later issue of the NEWS.

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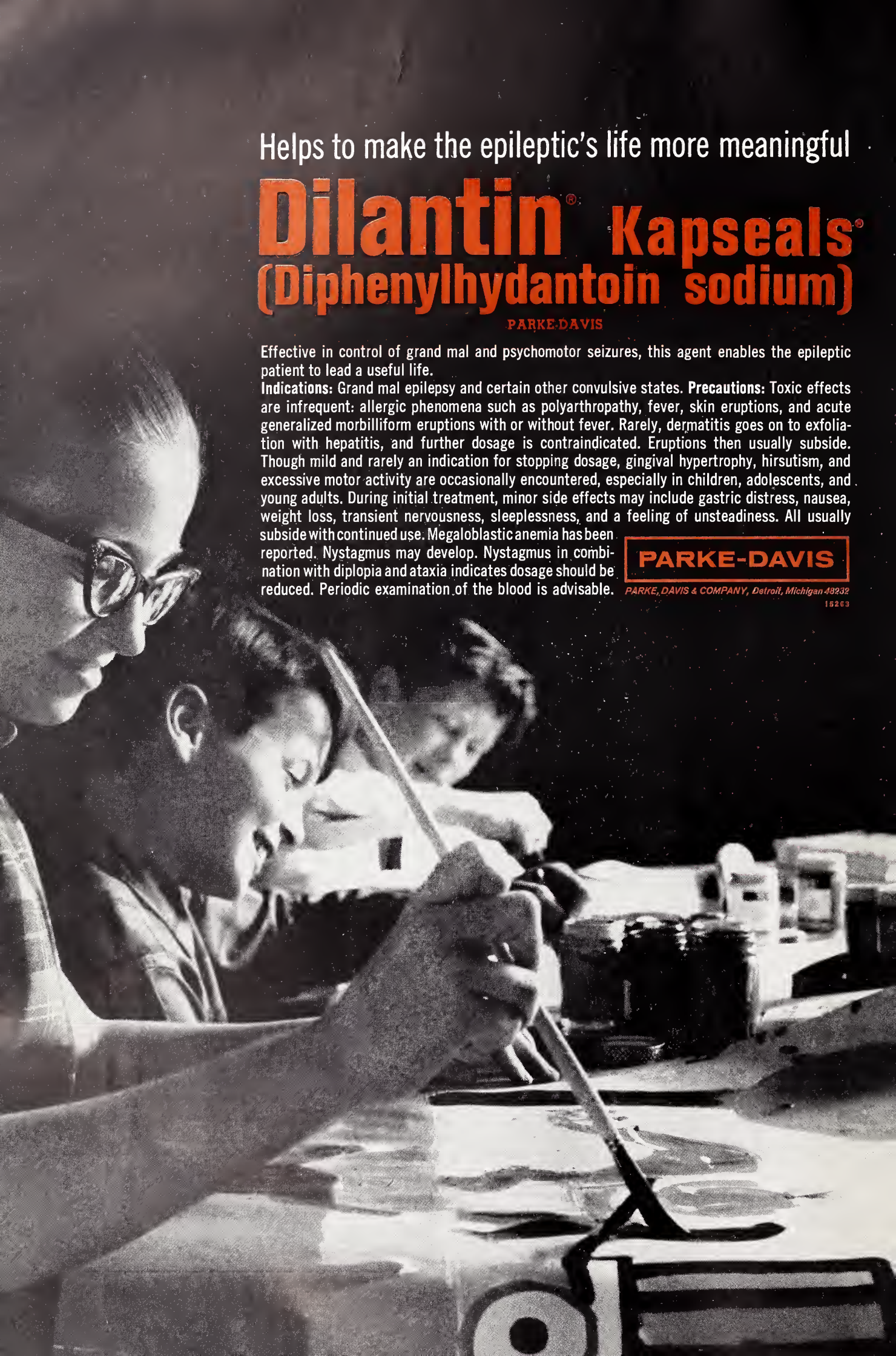
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Town Versus Gown

KENNETH C. SAWYER, M.D.
Denver, Colorado

THE GROUPS KNOWN in medical circles as "town" and "gown" have held separate points of view for many years. Complete agreement between them has seldom been reached, and in that respect American medicine, although capable of putting on a good face before the public, is not an entirely happy family.[1]

Since peace and stability have never been the lot of man, it is not to be expected that tranquility should obtain in a profession the members of which have always exhibited not only outstanding intellectual abilities but also marked individualistic traits. Medical leaders, however, are voicing increased concern over the rift between "town" (the private practitioners) and "gown" (the medical scientists), between the healers and the investigators, between the art and the science of medicine.[2] The contest in which specialists in private practice, specialists wholly occupied with teaching and research, and general practitioners are engaging may in the long run be helpful. A contest or a conflict is basically the weighing of one set of values against another, and the matching of these against the norm or the set of values which a majority of citizens in a democracy accept as valid. Yet there are areas in this dispute which call for exploration, if the medical profession and the people whom it serves are not to suffer harm.

I approach this difficult subject from a background of personal experience. After years of unhappiness, the Denver medical community has reached an equilibrium in which it has one of the finest medical schools in the nation, a strong, nonaffiliated, well staffed and economically sound city and county hospital, and several private hospitals which have consistently attracted full complements of interns and residents. Nevertheless, the "town and gown" pot, which began to boil in 1910, still simmers and occasionally erupts like Old Faithful. So even under what appear to be very stable and sometimes even happy conditions, the basic issues have never been resolved to the complete satisfaction of all.

May I remind you that I speak as a practicing physician, a grateful alumnus, a faithful faculty member, and not for but as one of nine individuals on a Council whose purpose it is to evaluate and to set standards for medical education at all levels in both affiliated and nonaffiliated teaching institutions.

Dr. Sawyer made this presentation at the annual meeting of the Iowa Medical Society, in Des Moines, last April.

THE HOARDING OF INTERNS AND RESIDENTS

Charges of hoarding interns and residents probably constitute the most disrupting single factor in this unfortunate situation. The director of medical education in one large city hospital has stated that because of the twentyfold increase in funds for medical research that has occurred over a span of 15 years, schools have tended to hoard interns and residents—to recruit far more of them than were once thought necessary, and to pay them with grant money. I believe that this statement is true and applicable, as far as residents are concerned, and that this is a glaring defect in our present system. If our medical schools fail to recognize and rectify this fault, they will invite governmental action to end the abuse, and no doubt rightfully so. In many instances the grants are wagging the school. This fact is being recognized more and more clearly by the taxpayers and by the tax distributors.

Now the shortage of interns is an entirely different problem. Grants are not a factor. For this reason the AMA established an *ad hoc* advisory committee on internships and hospital services in 1961, and the AMA House of Delegates adopted the report of that committee in November, 1962. The committee had been instructed to study the discrepancy between the number of internship positions and the number of interns available to fill them, and to develop other mechanisms for filling them. Its study revealed that in 1946 there had been 8,484 such positions, and that in 1961 there were 12,074 positions to be filled in all types of hospitals.

From 1951 to 1961 there had been a 20 per cent increase in positions for interns. The 229 affiliated or university hospitals obtained 4,468 interns, and the 587 nonaffiliated hospitals obtained only 3,705 interns. Thus, though the increase in available internships was nearly the same in both groups, the affiliated hospitals had three times as great success in recruitment.[3]

Such a disparity may have been a consequence of the superior teaching programs at university hospitals. If this is so, well and good. But this issue is and should be a matter of great concern to all of us, and we should remember that there is

abundant opportunity for private hospitals that are not affiliated with medical schools to develop outstanding intern-training programs. Many non-affiliated community hospitals provide the varieties of educational environment desired by significant numbers of medical school graduates.[3] It would be helpful if medical students were advised to compare programs, rather than arbitrarily to choose an internship at a university hospital.

DEPRECIATION OF THE CLINICIAN

Of great concern to everyone is the manner in which the clinician is being pushed into the background. Dr. John Romano,[4] after observations abroad as well as in the United States, commented: "In our country more than in any other I visited, I was struck by the depreciation of the clinician, as he is compared with his medical colleagues engaged in scientific studies in biochemistry and biophysics." Small wonder, then, that many of our young clinical scholars are tempted to leave the bedsides of their patients and to enter the laboratory. They are attracted by the increasing opportunities to initiate and participate in research work supported by salaries and project or program grants. They are attracted by the prestige attached to those positions, and by the rapidity with which those who hold them can attain great academic stature. The decline in clinical tradition and the prodigious increase in funds for medical research can have a disruptive effect on whole medical schools.

Many observers maintain that much of the money spent on research could either be left out of the budget or placed in a category where it would be of more direct benefit to the undergraduate student. Further, many nonaffiliated private hospitals turn out valuable literary contributions *without* grants, a fact which suggests that clinical research is as important as basic research activity. Let us therefore try to keep a reasonable balance in these areas.

WHAT PRICE FEDERAL AID?

Impressive changes have occurred in the financing of our medical schools since World War II. Their total expenditures have increased fourteenfold in 20 years.[5] Professional educators have long been criticized for supporting federal aid to education. This is a matter of constant contention.

Over one-half of medical education today is financed by the federal government—by your money and my money. This fact, along with the marked increase in research grants, contributes directly to our very disturbing "town and gown" problem. We cannot be too critical of the educator's willingness to accept federal aid, however, if the private grants are going into other fields, and if local and state governments are reluctant to furnish the money. Where else can he look, other than to the federal government?

USE AND ABUSE OF PRIVATE PRACTICE PRIVILEGES

The importance of private practice as a salary supplement is proclaimed by all but a handful of academicians, and is recognized by all but a handful of medical schools. One cannot very well teach what he cannot do himself.[1] We all agree that all men outside the ivory tower would be perfectly willing that the men teaching their children should earn all they could carry home, if they would observe the ethical restraints that bind other members of our medical family. Everyone loves a fair fight, but in a humanitarian field such as ours, advertising is and should be frowned upon.

STATUS OF THE VOLUNTEER FACULTY

The value of a staff appointment is variously appraised. Doctors volunteer for various reasons. For some, the obligation that academicism imposes is its chief attraction; they want the job because they like to teach. Such men are rare. Most part-time faculty members teach in the expectation of a reward more tangible than mere satisfaction in transmitting their knowledge and skills to younger men. They want an opportunity to improve their own knowledge.

In many schools, however, certain of the volunteers, while making significant contributions to the teaching program, get the feeling that they are only tolerated. Their responsibilities tend to become fewer and fewer, and finally they find themselves with no responsibilities at all. In these instances both the school and the volunteer lose, and the amateur academician becomes a bitter enemy of the institution.

DOMINATION OF SPECIALTY BOARDS

Great criticism has been occasioned by the domination that full-time medical school faculty members exert over the various specialty boards. Although the private practitioners outnumber the academicians a hundred to one or more, they are practically without representation on the specialty boards. If what I hear about the recent board examinations is true, it is pretty obvious that some practical advice for examining these candidates might be very much in order.

LACK OF INTEREST IN LOCAL MEDICAL AFFAIRS

Lack of interest in the local medical community, unless the medical school can dominate it, does exist in our area, I am sorry to say. On occasion, this has caused an almost irreparable break. Full-time university faculty men always attend and take part actively in the business meetings of the Medical Society. Seldom, however, are they to be seen at one of its scientific meetings, and very infrequently at a social gathering. It is said that they thoughtlessly schedule their postgraduate courses for the very times at which many of our traditional county and state meetings are held. The same tendencies are manifested in other ways. For

instance, the medical school took very little interest in the community internship program, and, finally removed itself from the joint community education committee. Many community hospitals which have attempted to work out residency programs with the medical school have consistently run into problems as a result of the school's insistence on dominating the projects.

Because of the faculty members' habit of exalting medical science above the training of physicians, the medical school and Denver General Hospital were unable to agree on a chief of service in medicine. The medical school wanted a basic-science researcher; Denver General wanted and indeed had to have someone interested primarily in taking care of patients. The contract between the two institutions was consequently dissolved, and a large reservoir of teaching material was lost to the school. Rather than negotiate, the school attempted, with the help of a liberal press, to have the policy-making authority taken away from the Board of Health and Hospitals, and turned over to the politically motivated City Council. The battle was a long and involved one, which improved the image neither of the academician nor of the volunteer faculty members who had been taking care of the citizens of Denver for a great many years.

We in the County Society—most of us alumni and faculty members of the school—were forced to continue the fight, and the controversy was conducted in the newspapers by a corps of full-time, tax-paid public relations men. Notwithstanding, the citizens of Denver overwhelmingly voted to keep the City Hospital in the hands of the individuals who had always supported the community. Now the Hospital is being run more efficiently and economically than ever before, with a lower *per diem* cost and shorter hospital stays. The heads of departments are full-time men, and the members of the County Society cheerfully accept the volunteer positions and feel that they are really making contributions to the community.

THE CAMPAIGN TO DISCOURAGE GP'S

Medical school faculties and administrators must abandon their holier-than-thou attitude toward the rest of the profession, and I refer especially to their attitude toward the general practitioner. He is not a has-been, and he is not extinct. Quite the contrary, he remains the backbone of American medicine. The emphasis on specialization that is currently to be found in many of our medical schools must cease. The end result is already obvious. We are crowding our cities with specialists, and are not providing replacements for the expiring and retiring general practitioners in our smaller towns. This trend will only open the gates to the cultists, and leave them free to take over the practice of medicine in our smaller rural towns and cities. With the M.D. general practitioner a thing of the past, who will supply our urban medical centers and medical schools with the complex cases they need if they are to maintain their present rate of operation? Certainly not the cultists!

The medical school faculty that considers itself superior to all men in private practice is not deceiving anyone but itself, and is stifling and strangling the practice of medicine. It is the academicians' claim, on one hand, that medicine has become so complex that the general practictioner cannot learn it all, and hence will shortly be extinct. On the other hand, these same individuals attempt to convey the idea that because a given individual is on the salary of a medical school, he is an outstanding research investigator, is a superb teacher and is a clinician possessed of skills in the care of patients which are denied to physicians not on medical-school payrolls. In short, they seem to contend, the general practitioner cannot be all things to all people, but a member of a medical-school faculty can! Those in private practice see the faculty members and the general practitioners through different eyes. These two groups of men have similar M.D. degrees; they took similar internships and, in some cases, residences; and they have identical licenses to practice medicine and surgery hanging on their walls.

Medical schools must recognize the fact that their staffs are not composed of supermen, but of ordinary physicians and specialists who merely have developed different interests from those of their colleagues in private practice. If medicine is to survive and is not to deteriorate further in the public's eyes, the schools and the men in private practice must learn to work together. The schools can utilize the abundance of material in our community hospitals without exercising complete control over those hospitals. In this connection the old African proverb, "One rooster cannot scratch the same piece of ground for another rooster," was never more true. Each hospital has its own board, and the American Medical Association requires that board to exercise its authority. Nowhere is that board authorized to relinquish or to delegate its powers to another institution.

SUMMARY

As in most other rivalries, the difficulties currently existing between the "town" and the "gown" physicians stem both from overlappings and from dissimilarities of interest. The divergences of opinion and conflicts of interest are compounded by failures in the transmission of information, and by failures in grasping it after it has been transmitted. The difficulties are further aggravated when private practitioners consider rumors and inaccurately conveyed reports against a background of existing threats to their incomes, against possible disruption of established methods of practice, and against proposals for fundamental changes in our basic concepts of free choice of physician and a possible straight-jacketing of individual free-

dom and initiative in a profession which has long been characterized by intense individuality and initiative.

These conflicts can be solved by a bilateral recognition of the following verities:

1. The primary mission of a medical school is undergraduate medical education. The primacy of this mission was initially established by the Flexner Report, and was accepted by all medical schools and other medical groups after the publication of that report.

2. The medical school must not only participate in graduate and postgraduate medical education, but should function as the hub of such activities in cooperation with the surrounding participating community hospitals, in order to utilize community resources fully for the benefit not only of the medical school but also of the staffs and other personnel of the community hospitals, and in order to present balanced programs of interest to the entire practicing profession, whether that practice be centered around the medical school as such, or about the community hospitals.

3. The faculty of a medical school must not only include fulltime clinicians, researchers and teachers, but also must avail itself of the rich resources in the community, consisting of qualified medical specialists, researchers working in related facilities, etc. Only thus can it expand its base of operation and make a maximum of scientific and clinical services available to the entire medical profession in its area.

4. The medical school must *not* be merely an ancillary unit of a large, private-practice, closed-staff clinic. Rather, it must be the originator, preserver and disseminator of medical knowledge of all varieties. Education itself is a worthy goal and must be supported for that reason, without having to prostitute itself in order to survive. Governmental agencies have begun to recognize that research grants, in many cases, are being used to support teaching and administration, rather than to pay for research.

5. The only way in which genuine cooperation between "town" and "gown" physicians can be utilized fruitfully, happily and continuously over a long period of time is by rigorously maintaining equity in the financial arrangements of the hospitals operated by medical schools. The full-time teacher or researcher must have clearly specified duties, and must fulfill them rigorously. However, to restrict the activities of such persons to particular jobs is reminiscent of trade-unionism, and must certainly be similarly unsuccessful. We certainly hope that the charge of "professional moonlighting" will never be raised.

Abilities, drives and productivities differ among individuals attached to universities, just as these qualities differ among individuals in private practice. However, fairness of ground rules must be maintained, and inequities must never be allowed to develop between the two groups. The only real compensation which a medical school can offer to its dedicated part-time, volunteer faculty members is the privilege of using the beds in the hospitals that it controls. At the present time, few if any medical schools in the United States are well enough endowed so that they can operate as full-time closed-staff units offering a *complete* spectrum of medical specialties to the intern and resident staffs without the participation of private practitioners from the adjacent communities. Some of the largest and most heavily endowed ones make no attempt to do so, and neither do the large institutions operated by the Veterans Administration, the U. S. Army and Navy, and other branches of the federal government, most of which have been in existence for long periods of time and have had long experience in their administrative practices.

The financial and professional rights of all physicians must be recognized, and saccharine fantasies such as the Alice-in-Wonderland tea parties that masquerade as serious conferences must be eliminated.

When the scars of internecine warfare have healed and when "town" and "gown" have united to provide better-trained physicians and good medical care, the profession can go on to greater accomplishments. Then only will public faith be renewed in one of the oldest and most honorable of all the professions.

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Scientific Articles

Total Retropubic Prostatectomy In Private Practice

WAYLAND K. HICKS, M.D.
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Many doctors in private practice regard total retropubic prostatectomy as a formidable procedure. We haven't found that attitude to be justified. We wish to present the results of our experience in the use of the procedure, and since the early diagnosis of prostatic carcinoma is essential to curative surgery, we shall include a review of our experience with needle punch biopsies in this report.

Twenty-five years ago, the early diagnosis of prostatic carcinoma was an exceptional occurrence. Fortunately it is no longer so, for the greater longevity of the present day has increased this neoplastic problem. In seven years, we have seen 349 patients with prostatic carcinoma, and 46 of them (13 per cent) have had lesions that could be considered intracapsular and not fixed to the surrounding tissues. From this group of 46 patients with intracapsular lesions, we selected 33 (9.5 per cent) as candidates for total prostatectomy. Only one patient older than 70 years was included in this selected group. He was 72, and in good health for his age.

The urologic surgeon himself is no great factor in bringing a high percentage of early cases to his office or to his institution. Publicity advocating periodic cancer-detection examinations, and the conscientiousness of the general practitioner, are the two big factors that increase early diagnoses of prostatic malignancy. A yearly digital examination of the prostate by way of the rectum is still the best means of screening men past 40 years of age for carcinomas that are early, intracapsular, asymptomatic and curable.

This paper was presented at the meeting of the Iowa Urological Society, in Dubuque, on June 8, 1963.

THE EFFICIENCY OF NEEDLE BIOPSY

For the past 10 years, we have been using biopsy needles to make diagnoses of suspicious prostatic lesions. We have reviewed our records back to 1956, and have noted the results of 229 needle biopsies on 215 patients with suspicious lesions. It is important to determine the degree of accuracy achieved by this method, and Table 1 contains our statistics. We were particularly interested in the 148 patients with non-fixed lesions, for the possible cures would come from that group. Their lesions varied in size from small nodules to good-sized areas of hardness.

Of the 148 patients with non-fixed, intracapsular lesions, 42 were found to have carcinoma by the first needle biopsy. As proved by later observa-

TABLE 1

BIOPSY RESULTS

Patients with suspicious prostatic lesions			215
Non-fixed lesions	148	Fixed lesions	68
First biopsy positive	42	First biopsy negative	106
Negative lesions:			
Becoming positive	6		
Remaining negative	98		
Patients lost	2		

tion, those 42 initially positive biopsies were 100 per cent correct!

In the same group of 148, it was even more important that we pay attention to the 106 patients who had negative biopsies on the first needle punch. Two have been lost to observation for unrelated causes. Of the remaining 104, six were later found to have carcinoma of the prostate. Among those six was one who developed prostatic carcinoma in a supposedly benign nodule five years later, and a second with an initially benign nodule who developed carcinoma 2½ years later. A few of the 104 have since died from causes unrelated to prostatic problems, and they have therefore been left in the statistics. The number of accurate diagnoses in the observed group of 104 negative needle biopsies was thus 98, and the apparent percentage of accuracy was 94. The future development of neoplasms in this group could change the accuracy figure. Fortunately, of the six patients who initially were negative on needle biopsy but subsequently became positive, three were diagnosed early enough by means of subsequent biopsies so that they could be included in the operable group.

THE SUPRAPUBIC APPROACH

Total retropubic prostatectomy is not a difficult operation if the surgeon is familiar with the suprapubic approach. We have found that the transverse incision exposes the retropubic space maximally. To increase the exposure, one cuts the rectus muscles close to the symphysis. The vesicoprostatic region is thus well exposed (Figure 1). Digital exploration then determines the presence of any suspicious iliac nodes, and if some are found, they are removed for immediate pathologic study by frozen section. Early involvement of one or two iliac nodes doesn't necessitate discontinuing the operation.

With a hemostat or the point of a knife, the endopelvic fasciae are opened at the two and ten o'clock positions of the vesicoprostatic juncture. The forefinger is then slipped along the prostate, on each side, down to the apex. A steel sound is passed to the bladder transurethrally, and with this as a guide, the forefinger separates the urethra from the rectal wall in the apical area. Because this separation may be difficult or easy, caution

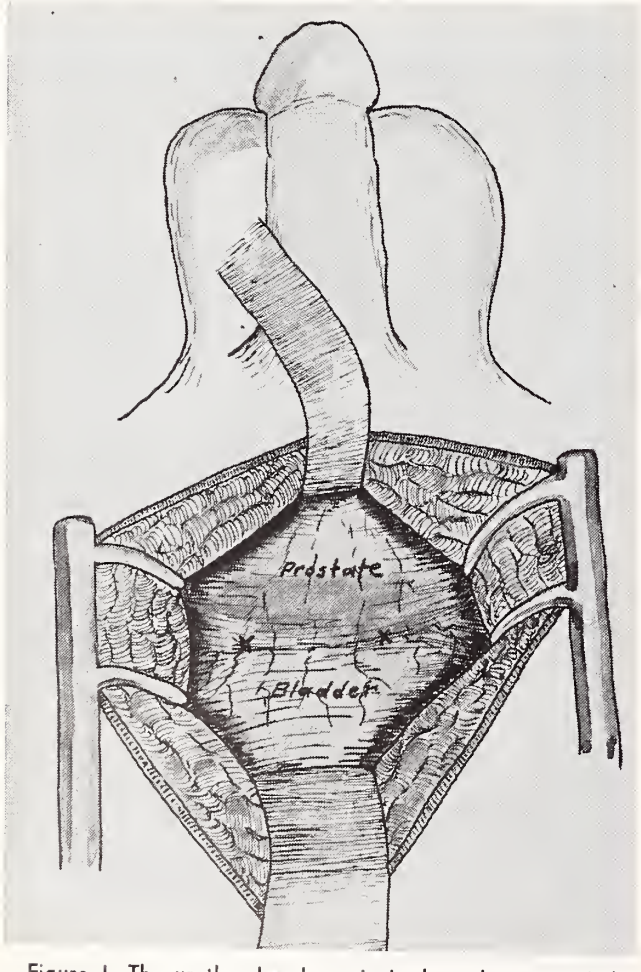


Figure 1. The urethra has been incised at the apex of the prostate. The bladder has now been opened, preparatory to excision of the prostatic urethra from the bladder.

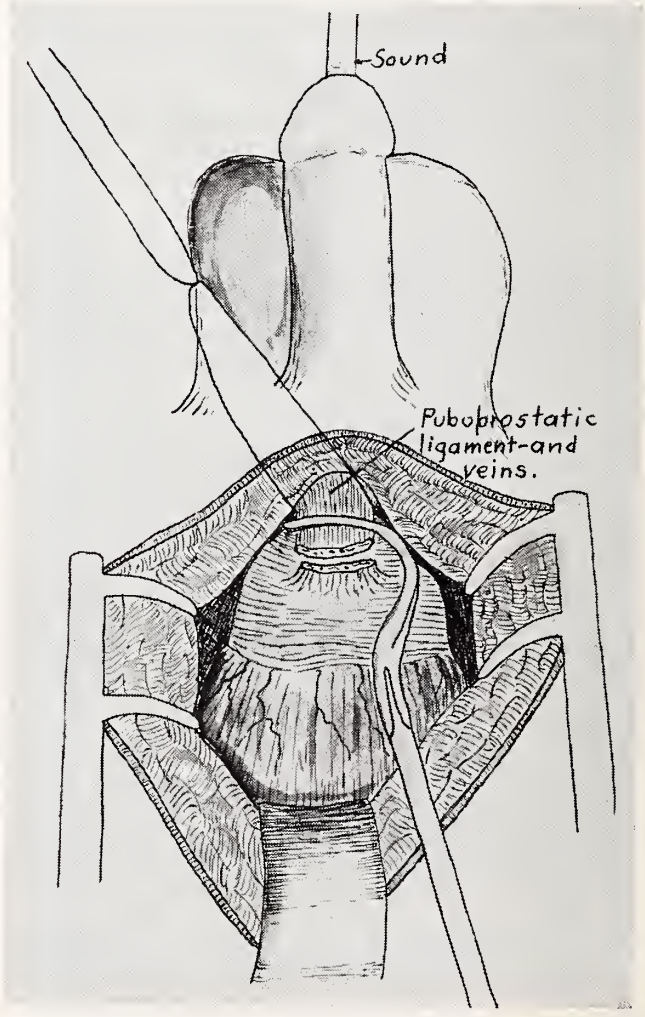


Figure 2. The puboprostatic ligament and veins are ligated, and thus a very active source of bleeding is controlled.

must be used to prevent damage to the rectal wall. Once the separation is complete, the fingers are slipped above the sound, in the region of the apex, to separate the urethra from the bridge of tissue above. This bridge of tissue contains the puboprostatic ligaments and large veins. This bridge of tissue is clamped by means of a long, curved clamp, and then it is cut and ligated (Figure 2). Next the sound is removed, and the urethra is incised at the point where it enters the apex of the prostate (Figure 3).

From the time the endopelvic fasciae are opened until the urethra is sectioned, there may be some difficulty in controlling hemorrhage. Our experience has been that it is best to ignore bleeding, if it is difficult to control, and using suction, to continue the operation rapidly until the urethra has been incised. If bleeding is still troublesome, a Foley bag catheter is inserted transurethrally, inflated, and pulled back against the floor of the pelvis. This traction-pressure will control the main bleeding until the prostate has been removed and better visualization obtained.

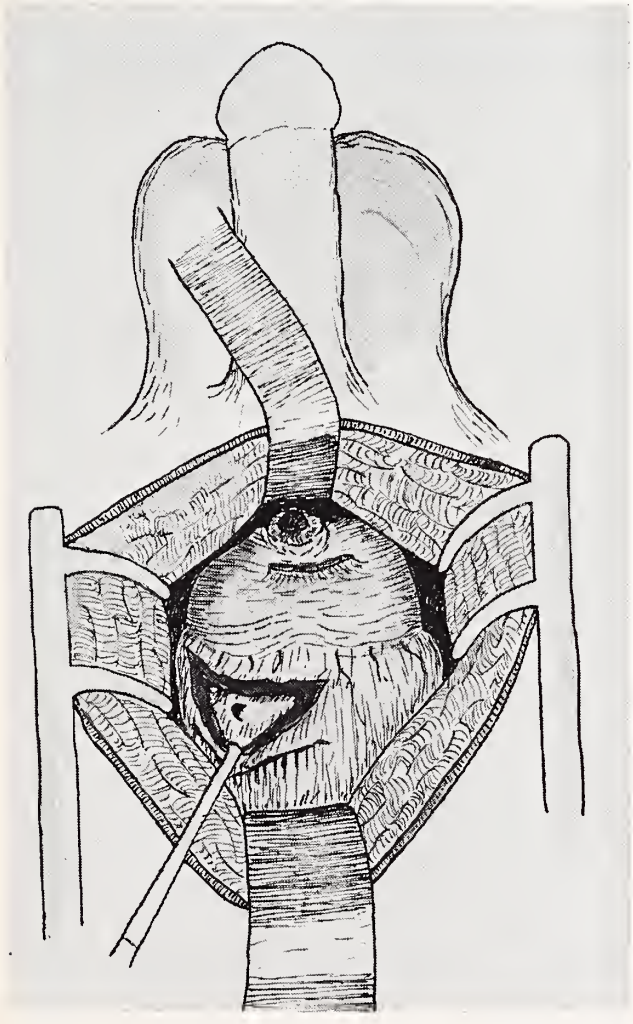


Figure 3. A transverse Cherney type of incision is used. The rectus muscles are cut close to the symphysis. The X's mark the points where the endopelvic fasciae are incised to allow insertion of a finger and then blunt dissection along the prostate, with separation of the urethra from the rectum at the apex.

The next step is to open the bladder at the vesicoprostatic juncture. This opening is made clockwise from the 9 o'clock to the 3 o'clock position. Number 5 or 6 plastic catheters are inserted up the ureters (Figure 4). With the catheters identifying the ureters in the trigonal area, the forefingers are worked under the bladder neck until it has been separated from the tissues below. The separation of the bladder from the prostate can then be completed without danger.

Next, the lateral vascular pedicles to the prostate are ligated, and then comes the slow and tedious dissection of the many tough, fibrous sheaths from the seminal vesicles and the ampuli of the vasa (Figure 5). The seminal vesicles are very friable, but careful dissection will allow their removal intact.

The bladder opening is closed with two layers of No. 000 chromic suture, but a good-sized opening should be left superiorly for anastomosis to the stump of the urethra. We think it is better to have this opening a little large rather than too small. If the opening is sufficiently wide, the bladder can be pulled down over the stump of the

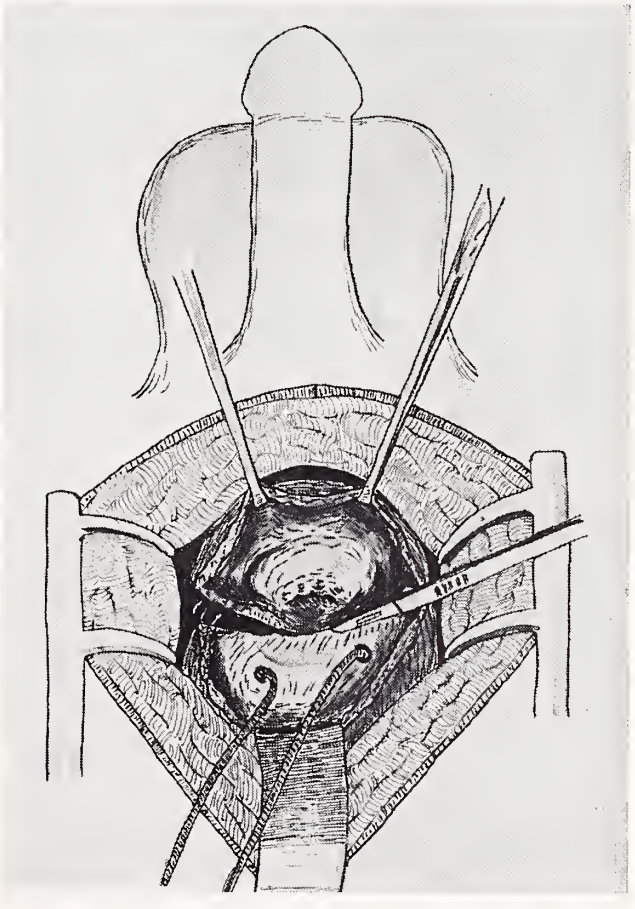


Figure 4. Plastic urethral catheters are inserted to identify the ureters as the prostatic urethra is excised from the bladder.

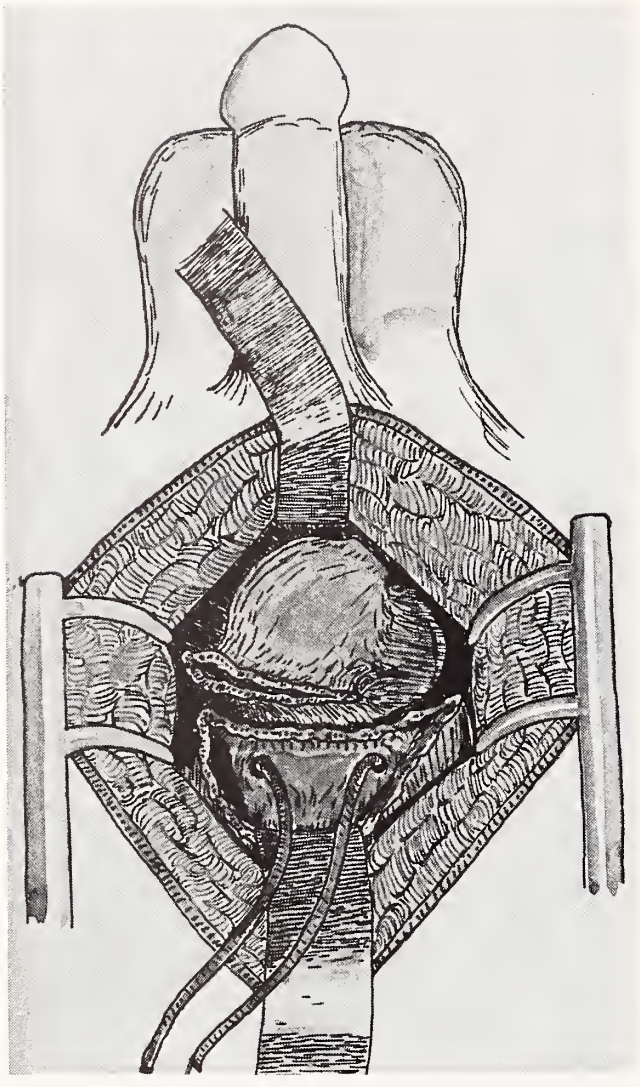


Figure 5. The dense fasciae about the vascular pedicles and the seminal vesicles are tedious to dissect away.

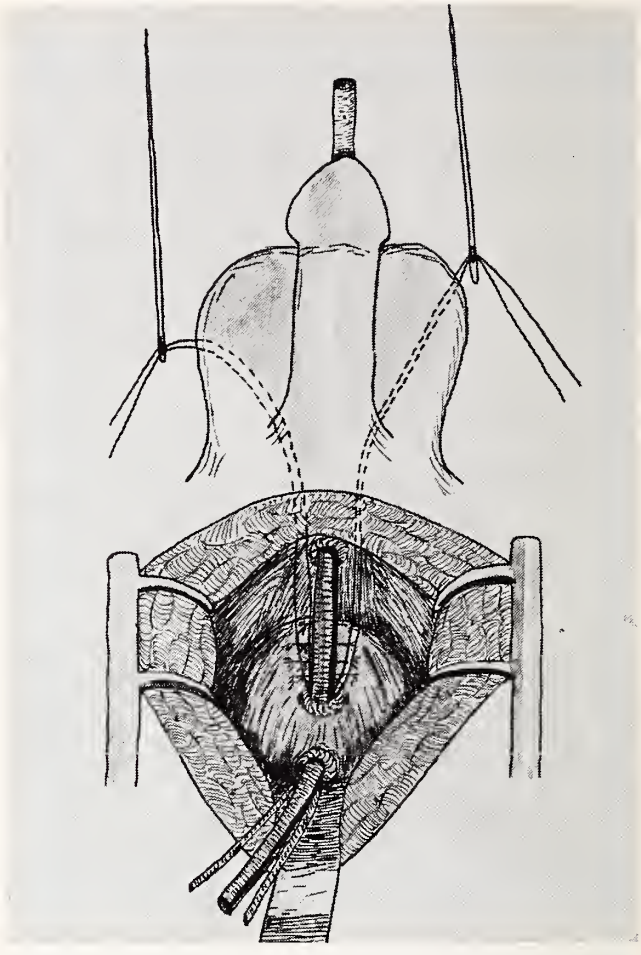


Figure 6. Traction sutures are placed through the perineum, alongside the bulbous urethra, and tied over dental rolls. This technic pulls the vesicle opening over the urethral stump, and also controls hemorrhage from the area.

urethra by means of the traction sutures, but if it is too small, the approximation may be distorted.

We also drain the bladder suprapubically, for it has been our experience in this type of surgery that it is better to use too many drains than too few. We make a stab wound in the bladder wall as far above the new vesicle opening as possible, and pull through a Malecot catheter for suprapubic drainage. If the suprapubic catheter is not brought out at a sufficient distance up on the bladder wall, transurethral traction will pull it down beneath the symphysis. The bladder should also be sufficiently free to allow the new opening to be approximated to the stump of the urethra without tension.

Using half-lengths of No. 2 chromic sutures on very long, straight needles, one places the chromic sutures through each side of the new vesical opening. This placement of the traction sutures will tend to keep the vesical opening spread apart when later traction pulls the new orifices over the stump of the urethra. A 75 cc. Foley bag catheter of a number 22 or 24 size is then passed transurethrally, inserted into the bladder, and inflated. The two ends of each suture in the new bladder opening are both inserted through the large eye of a 3½-inch straight needle (Figure 6). The needle, lying on the middle finger, is pushed alongside the urethral stump, and following the line of the bulbous urethra, it is pushed out through the perineum. The suture on the opposite side of the new vesical orifice is then pushed through the perineum in the same manner. Those sutures are tied over doubled dental rolls to give a firm fixation at the new anastomosis.

The wound is closed, with rubber tissue-drains on each side of the bladder neck. The cut ends of the rectus muscles are reapproximated to their attachments on the symphysis. Traction is maintained on the transurethral catheter for the first 24 hours by taping it to the thigh (Figure 7). The plastic catheters are removed after five days, and the suprapubic catheter is removed after seven or eight days. The transurethral catheter is removed as soon as the suprapubic urinary sinus has healed fairly well—usually in 14 to 15 days.

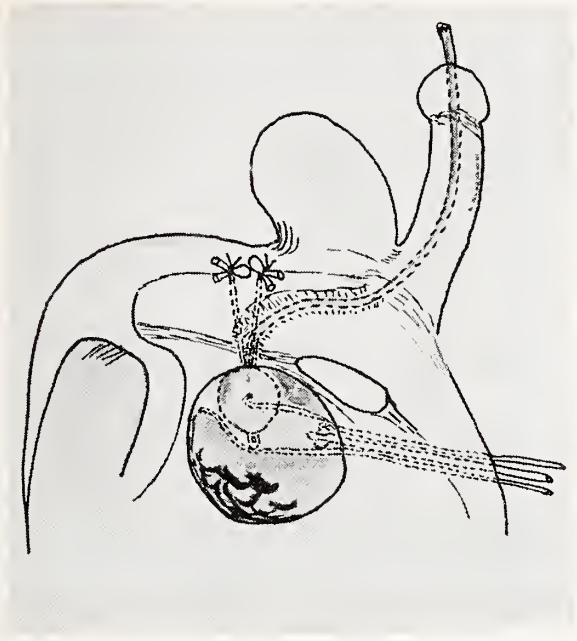


Figure 7. A cross section view of the final approximation.

We have not varied the surgical technic to any appreciable degree in the past six years, but radical pelvic-node dissection may be a worthwhile additional step, particularly in the younger man with early prostatic carcinoma.

RESULTS OF SURGERY

Early diagnosis revealed that 45 of the 148 intracapsular lesions were positive for carcinoma of the prostate. Of those 45 patients, 33 were found suitable for total prostatectomy. Table 2 is a study of the surgical results. Of the 33 patients on whom the operation was performed, one was killed a year later in a tractor accident, a second died of a primary carcinoma of the pancreas not diagnosed at the time of the prostate surgery, and a third died 15 hours postoperatively from shock and coronary heart disease. Six months to six years of observation have been carried out on the remaining 30 patients, but insufficient time has elapsed to permit a forecast of the final results. At this time, four patients have evidence of recurrence and have been placed on hormonal therapy. The one patient with a single iliac-node involvement at the time of surgery has also been on hormonal therapy and is still free of recurrence.

Complications have not been very troublesome. Two patients have day leakage, but only on stress. Eight developed stricture at the anastomoses, but to our surprise, two or three dilatations gave permanent relief.

SUMMARY

Prostatic needle biopsy is an accurate diagnostic aid (94 per cent accurate) in early carcinoma of the prostate. In men past 45 years of age, yearly physical examinations that include digital rectal examinations will disclose many suspicious lesions. Our most recent figures indicate that needle biopsy will detect malignancy in approximately 30 per cent of such suspicious lesions.

We feel that total retropubic prostatectomy is a procedure that falls within the capabilities of any urologic surgeon with average surgical skills. The complications encountered have not been discouraging. Although insufficient time has elapsed for an evaluation of final results, it is our opinion that total retropubic prostatectomy is a valuable part of the treatment of carcinoma of the prostate.

ADDENDUM

Since finishing this survey, we have learned of the death of a fourth member of the group of 33 patients who underwent total retropubic prostatectomy. This man was the only one who had an involved iliac node, and he had been on hormonal therapy since his surgery in 1958. The cause of his death was coronary occlusion, and he had shown no evidence of recurrent prostatic neoplasm.

TABLE 2

RESULTS OF RADICAL PROSTATECTOMY

	1956	1957	1958	1959	1960	1961	1962	Totals
Patients*	6	7	4	7	4	2	3	33
Mortalities	0	0	0	0	1	0	0	1
Sphincter control								
100%	6	5	4	6	4	4	4	33
Day leakage	0	2	0	1	0	0	0	3
Night leakage	0	0	0	0	0	0	0	0
Recurrences	0	3	1	0	0	0	0	4
Strictures								
Early	1	2	0	3	0	0	2	8
Late	0	0	0	0	0	0	0	0
Iliac node involvement	0	0	1	0	0	0	0	1

* Ranging in age from 57 to 72 years.

Corrective Rhinoplasty

Preoperative Psychologic and Aesthetic Considerations

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Iowa City

By virtue of its prominent position on the face, the nose is probably the most conspicuous feature of the human physiognomy. Any deviation from what is regarded as normal for a particular race, ethnic group or sex becomes of great importance to many people. The psychic trauma that may result from a nose that is only slightly abnormal is well known. Of equally great importance is the fact that any interference with nasal respiratory function leads to discomfort and interferes with proper drainage, and clinical experience has shown that an unsightly cosmetic structure and malfunction often accompany each other.

In our present era, individuals have become extremely conscious of their appearance, largely as a result of the influence of popular magazines, movies, and television. Because of the population shift, there are those minorities who, in their desire for complete social acceptance by the host community, will demand cosmetic surgery to make them appear less "foreign." We therefore have a Japanese requesting the removal of the epicanthal skin fold, a Negro submitting to surgery in order to have a nose of Caucasian proportions, and an Arab requesting the removal of the nasal hump. In addition, automobile accidents are progressively contributing to nasal disfigurements. For completeness, one should also mention the deformities resulting from unsuccessful nasal surgery. Consequently the demand for cosmetic nasal reconstruction is constantly increasing, especially since the public has become well aware that corrective plastic procedures are available. Furthermore, the nose is one of the few features of the face that can be altered without any outward evidence of surgical interference such as scars or suture marks.

In selecting patients for corrective rhinoplasty, it is important to screen them on the basis of their psychological makeup as well as any anatomical abnormality. It is most essential that the surgeon be satisfied with and willing to accept the patient's reasons for requesting surgical correction of his nose.

PSYCHOLOGICAL CONSIDERATIONS

Anyone practicing cosmetic surgery must be constantly alert for the emotionally unstable patient who may have used his "deformity" as a psychological crutch for all his difficulties, for the removal of this psychological support may result in a conversion neurosis and send him in search of some other unreasonable explanation for his failures, or may even convert him into a frank psychotic.[6] Such individuals are often readily detected and are persuaded to forgo the desired surgery and to seek psychiatric consultation instead. On the other hand, the surgeon must be wary of the patient whose psychic problems are so deeply seated as to become obvious only after the operation.

One should also try to avoid operating on persons with minor nasal defects, the importance of which they have exaggerated. In the same group is the patient who is so hypercritical and demanding that he will not be satisfied with the result, no matter how good it may be. Unfortunately, this type cannot readily be screened preoperatively.

Some patients will demand that their noses be altered to a particular size and shape. To accede to such requests would be fundamentally wrong. The patient should no more be permitted to dictate the shape of his proposed nose than be allowed to dictate anything in any major surgical procedure. Furthermore, an understanding in this regard must be reached at the outset. The responsibility for the operation, with all its surgical as well as cosmetic sequelae, rests entirely with the surgeon, for he should know best what is most suited to the particular patient.

On the other hand, however, surgical change of the facial appearance may be of great psychotherapeutic value. It can bolster the ego and may stabilize much of the psychic energy which has been misdirected into concern about appearance. This is especially true after the adolescent period when the face begins to assume its secondary sex characteristics, when orthodontic appliances are being removed, and when social mingling with the opposite sex begins. During this period of hero-worship, when hair styling is sought by both males and females, psychic trauma may readily result even from minor variations from the ideal.

Fortunately, most of the patients requesting

rhinoplastic surgery appear to be normal, psychologically stable individuals who merely wish a more harmonious balance of their facial features. They are no different from the aesthenic persons who choose to wear padded garments. In a preoperative psychologic study of 120 females requesting rhinoplasty,[4] it was shown that as a group they had the lowest incidence of significant psychiatric disorders. Self-consciousness about the shape and size of the nose invariably dated from adolescence, and the majority claimed to have inherited their fathers' noses. Unconsciously, these patients felt that this paternal identification was discordant to a comfortable femininity, and that it would act as a block to their emotional capacity for dealing with courtship and marriage. There is no doubt that such patients derive a most beneficial psychic boost from corrective rhinoplasty.

Women over 30 years of age, whose most attractive physical attributes have begun to show the passage of time, often feel that the correction of a long-standing sense of nasal deformity is requisite for their dealing with marital strain or regaining a youthful appearance. There is no denying that a shorter nose gives a younger appearance to the face (Figure 1).

AESTHETIC CONSIDERATIONS

The prerequisites for nasal plastic surgery include a normal nasal anatomy and physiology, and the possibility of achieving acceptable aesthetic results in conformity with the patient's general facial structure.

In any reconstructive procedure on the nose, the rhinoplastic surgeon must have the necessary technical skill and artistic judgment to reconstruct a nose so that it is acceptable both physiologically and cosmetically. All other things being equal, the success of a rhinoplastic operation is probably as much dependent on the aesthetic judgment and artistic ability of the surgeon as upon his technical skill. Cosmetic rhinoplasty is basically an art, once the principles of the surgical procedure have been mastered, for no matter how skillfully the surgeon performs the operation, any adjustment to particular aesthetic requirements depends on his artistic "feel," rather than on his observance of surgical principles.

From an aesthetic standpoint, nasal aberrations may be classified as:

A. Excessive tissue (Figure 2, a-g).

B. Too little tissue (Figure 2, h-k).

C. Combinations of A and B above (Figure 2, i & k).

D. Obvious asymmetry (Figure 3 a).

When one glances at Figure 2, it seems that it should be a simple matter to determine whether any nose is "normal" or not, and apparently it should be just as easy to ascertain what is needed to correct it. In practice, however, it often is impossible to assess the total nasal deformity without detailed study, since one defect often camouflages another. For instance, a "hump" may hide the fact that a nose is excessively long (Figure 4); the presence of a "saddle" lends an illusion of shortness (Figure 5); a receding chin makes the nose appear more prominent, and a protruding chin tends to make it seem longer (Figure 6). Similarly, an acute nasolabial angle exaggerates the length of the nasal dorsum (Figure 1 a). One



Figure 1. Pre- and postoperative profile views. Note that the shorter nose gives a younger appearance to the face.

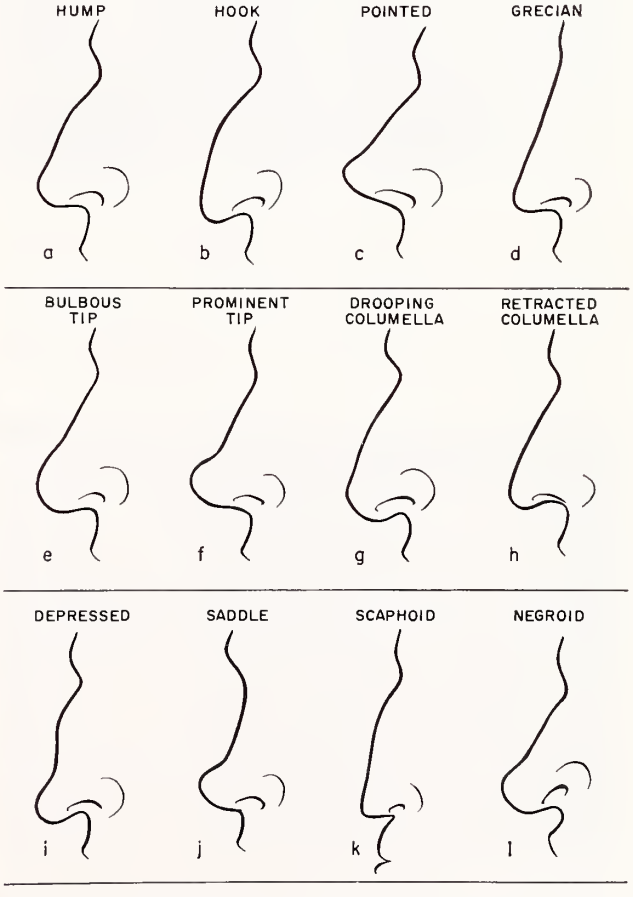


Figure 2. Preoperative profile tracings of the commoner types of nasal deformities.



Figure 3. Preoperative and corrected front views of a deviated nose. The correction was produced by reconstructing the nasal septum.



Figure 4. (a) In presence of the hump, the nose does not appear excessively long. (b) Postoperative view. The length of the nose had to be reduced to produce this result.

therefore finds it helpful to make detailed studies of preoperative photographs of the patient before embarking on the surgical correction of the deformed nose.

In planning an operative procedure, one constantly aims at a nose which will be in harmony with the other facial characteristics, in size and shape. In the presence of a humped nose, for instance, a prominent pointed chin is not quite as noticeable as it is with a small retroussé nose (Figure 6). Similarly, a dimpled chin may be quite in harmony with a broad nose, but it would attract more attention if the nose were made short and narrow.

From early times, artists have tried to establish geometrical scales as a guide to the ideal face. In more recent years Joseph,[5] the father of modern rhinoplasty, designed a profilometer to measure exactly the ideal nasal dorsum elevation on the facial profile. Others have since added their own modifications.[2, 7] It must be borne in mind that exact scales cannot be used during an operation, if only because of soft-tissue swelling, due both to infiltration with local anesthetic and to surgical trauma. Furthermore, two-dimensional scales derived from a flat photograph cannot readily be applied to three-dimensional tissues consisting of hard bone, flexible cartilage, and edematous skin. Nevertheless, there are certain accepted artistic limits within which one aims to design a nose that will be suitable in relation to the rest of the physiognomy.

Classically, it is said,[1] the vertical height of the



Figure 5. (a) The "saddle" deformity lends an illusion of shortness to the nose. (b) The result following the insertion of a bone graft to the dorsum.

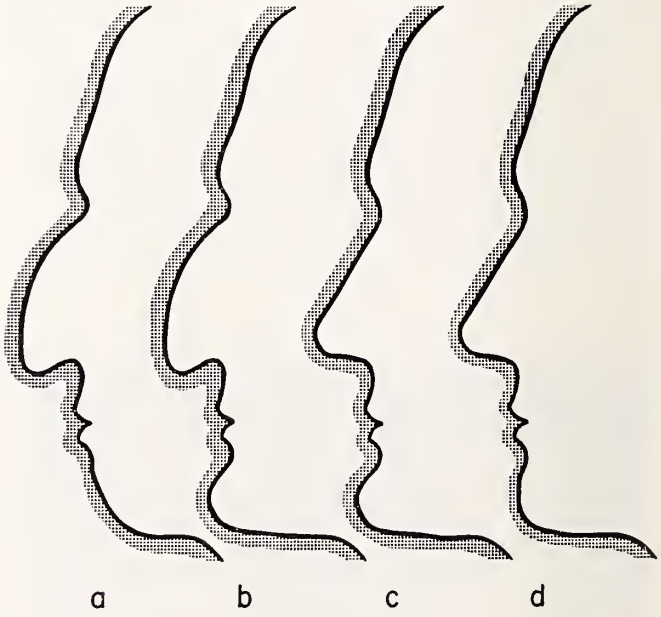


Figure 6. Experimental outlines to illustrate need for assessment of complete profile. (a) and (b) are identical profiles except for chins. It is quite obvious that the bigger chin of (b) is more harmonious with this prominent nose. (c) is (b) after corrective rhinoplasty; the chin is too prominent. (d) is (b) after corrective rhinoplasty and reduction of chin, producing a pleasant postoperative profile. It should therefore be obvious that, if (a) were to have a corrective rhinoplasty, the chin should be built up to result in (d).

face is divisible into three equal parts (Figure 7), namely (a) hairline to eyebrows, (b) eyebrows to nasal tip, and (c) nasal tip to mentum. Though frequently so, this is not always true.[5, 8] In addition, the hairline is a most inconstant landmark, and the lower third, apart from individual variations, becomes shorter with age as a result of dental attrition and alveolar resorption. Very little, if anything, can be done surgically to alter the height of the upper third, but the lower third can be adjusted somewhat either by the dentist or by the surgeon. The middle third can be made to appear longer or shorter by altering the length of the nose (Figures 1 and 4).

The proportionate length of the nose is indicated by the angle formed between the columella and the upper lip (Figure 8). This *septo-labial angle* normally measures between 90 and 105 degrees, depending on the shape of the face, sex and general build of the patient. For the average male profile, a septo-labial angle of about 90 degrees is harmonious (Figure 8 b). On the average female face, a slight tilt is often desirable, but as a rule one should not exceed an elevation of 105 degrees (Fig. 8 a), because of the undesirability of showing too much of the nares in the front view. From the front, it should be possible just to see into the apices of the nostrils. The nostrils do not show at all if the nose is long, with a drooping tip (Figure 9). However, if one is dealing with a patient who has a long upper lip, shortening the nose will accentuate this feature. On the other hand, a dropped nasal tip frequently interferes with respiration, for there is a tendency for the nasal alae to impinge medialwards. It should therefore be stressed that it is quite impossible to establish hard and fast rules for rhinoplasty. Good judgment and experience are invariably the most valuable guides.

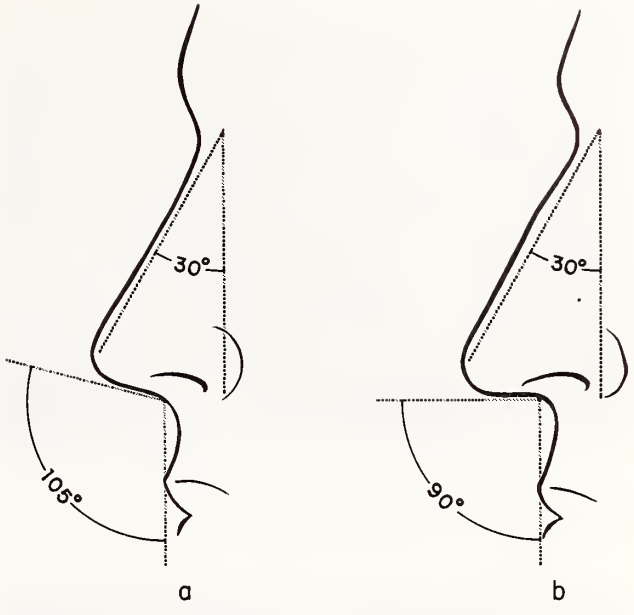


Figure 8. Tracings to show the ideal angle of profile projection of the nasal dorsum—30°. The proportionate length of the nose is determined by the septo-labial angle, which should aim at 105° in the female (a); and 90° in the male (b).

On the average, the dorsum of the nose should project from the face at an angle of about 30 degrees (Figure 8), but a range between 25 and 35 degrees is acceptable, depending on such other features as the length of nose, slope of forehead, and prominence of the chin and lips. By mapping this *angle of profile projection*, one can determine with a fair degreee of certainty whether it is neces-

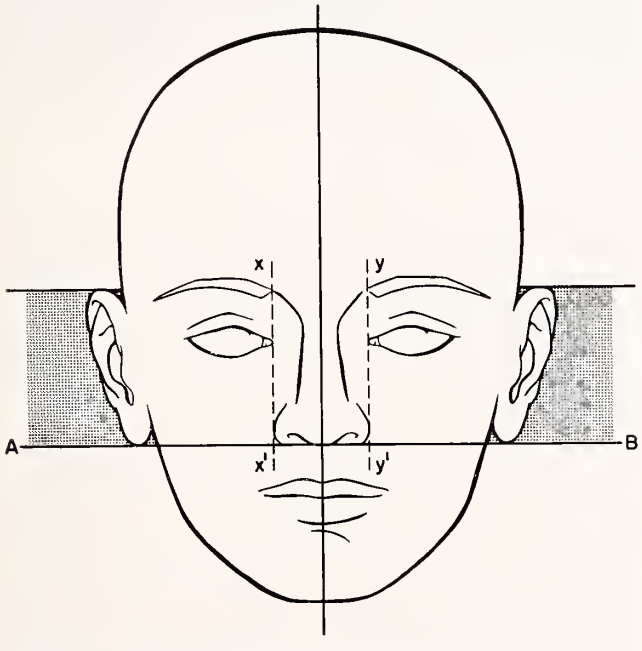


Figure 7. Anthropometry of face. Upper 1/3 is not considered, because of inconstancy of hairline. Lower area—from eyebrows to tip of chin—may be divided into two equal vertical halves by line AB which passes through lowermost tip of nose. Middle third (shaded area) may thus be changed by altering length of nose. Intercanthal lines xx' and yy' demarcate the lateral boundaries of the nasal alae. Note that x'y' is equal to the length of one eye.



Figure 9. In the female, a slight tilt of the nose is often desirable. It should be sufficient to make the apices of the nostrils just visible in the front view.



Figure 10. Pre- and postoperative profile views of nose with bulbous tip. Corrected by trimming and repositioning the lower lateral cartilages of the nose.



Figure 11. Preoperative and corrected profile views of scaphoid or "dish-face" deformity.



Figure 12. Preoperative and corrected views of dislocated nasal septum. Note in (a) that the caudal edge of the septum interferes with the airway of the right nasal vestibule.



Figure 13. Preoperative and corrected views of a patient with broad nasal columella.

sary to reduce or add to the nasal skeleton in order to make it fall within desirable limits.

A fairly common deformity is a bulbous nasal tip, usually due to large lower-lateral cartilages. In association with a large nose, this abnormality is not very noticeable, but is very obvious on an otherwise well-proportioned nose (Figure 10). Trimming the lower-lateral cartilages usually produces a pleasing nasal tip.

Often a rhinoplastic procedure by itself is not enough to produce the desired effect, for the rest of the profile may be out of harmony with the nose. For example, a receding chin may have to be advanced (Figure 6), or even the whole middle third of the profile outline may have to be brought forward (Figure 11).

A full-face study will indicate the nasal width and whether or not the nose symmetrically occupies the midline of the face. Generally, the nasal pyramid should lie within the bounds of two lines dropped vertically from the inner canthi of the eyes (Figure 7), and the straight dorsum should follow the line midway between the parallel to these inner canthal lines. Here again, the general shape of the face must be considered. A narrow face with a relatively wide intercanthal distance will obviously require different planning.

A moderately deviated nasal septum, aside from interfering with normal nasal physiology, often tends to displace the cartilaginous nasal vault laterally as well as inwards (Figure 3).

A further aspect of preoperative study is the evaluation of the columella and nasal septum. Dislocation of the caudal tip of the septum tends to deviate the columella to the other side (Figure 12), and in addition, the dislocated septal edge itself may interfere with the airway of the homolateral naris. The columella is sometimes retracted because of a lack of septal support, and as a result the nasal tip is accentuated (Figure 2 h). Frequently one encounters a broad columella which may be perfectly in the midline, but which interferes with nasal respiration (Figure 13). Narrowing will facilitate better airways as well as produce a better cosmetic result.

In conclusion it should be emphasized that since

no two faces are alike, it is quite impossible to lay down definite rules for planning rhinoplastic procedures. Once the surgeon has had experience and has acquired a basic feel for aesthetics, he can plan a reasonable scheme, always provided that the patient's psychological background, the elements of nasal physiology, and the over-all cosmetic requirements of the individual case are considered. In addition, it must be stressed that one should avoid giving the patient a nose which gives obvious evidence of having undergone surgical reconstruction.

SUMMARY

The nose is a dominant member of facial physiognomy, and is one of the few features which can readily be altered to produce dramatic results without any of the usual surgical stigmata such as scars or suture marks.

For the protection of both the patient and the surgeon, the selection of patients should include psychological screening. An emotionally unstable individual who has used his deformity as a psychological crutch should be referred to the psychiatrist; the type who has exaggerated a minor deformity should be discouraged. However, the majority of patients seeking rhinoplasty are normal, psychologically-stable individuals who merely desire a more harmonious balance of their facial features. Most of the female patients claim paternal identification of their deformity, and unconsciously regard it as discordant to a comfortable femininity. The large majority of these patients become psychologically better adjusted following cosmetic rhinoplasty.

Nasal deformities may be grouped into (a) those with excessive tissue, (b) those with missing tissue, and (c) those with obvious asymmetry. The nose must be regarded as part of the patient's facial features, and planning should aim at over-all harmony. Certain basic artistic principles, as applied to the classically perfect face, have been described as aids to the surgeon in planning the future nose. Stress has been laid on the surgeon's aesthetic judgment as a most essential complement to his technical skill.

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Accident Proneness

On-the-job injuries result from a psychological process, Drs. A. H. Hirschfeld and Robert C. Behan, of Detroit, have concluded following a study of some 300 such accidents. The patterns of behavior which preceded the mishaps were so sharply defined that they think further studies will make it possible to predict, and thus to prevent, many injuries.

Writing in the October 19, 1963, issue of JAMA, they said: "Before the accident occurs there is a state of conflict and anxiety within the patient. As a result of this condition the worker finds a self-destructive, injury-producing act which causes his 'death' as a worker." Many skilled workers suddenly do things, under such conditions, which novices would not make the mistake of doing. Safety rules are often broken, they said, and several infractions frequently occur at the same time.

Another pre-accident pattern was a prediction of impending doom made by the worker himself, the authors said. Such forebodings on the part of military pilots have prompted USAF flight surgeons and supervisory personnel to withdraw flight privileges temporarily, and plant medical officers might take similar action with regard to workers who have potentially dangerous jobs.

The identification of these patterns as "accident proneness," the authors contend, fails to take into account the real events in the individual's life. "Our findings do not indicate this at all," they declared. "They indicate that under special circumstances, when certain conflicts exist, many individuals tend to cause their own accidents, and probably will hold onto the injuries they sustain, because the accidents solve their life problems." The aging worker, for example, begins to lose his physical strength and as a consequence fears the loss of his only salable commodity and his job, which represents his main purpose in life and is tied to his masculine identification and even his social life.

"He is like the soldier on the battlefield who would run to save his life but who also wants to stay and be a man," they said. "The conflict can be resolved with a partial solution. The soldier who is hurt doesn't have to fight, and the sick laborer doesn't have to work."

These patients are extremely difficult to treat, the authors concluded. They are solving their life problems by developing symptoms, and their symptoms guarantee them a legal incapacity which will provide for their continued support.

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The Iowa Blood Type Disease Research Project: II

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In 1958, the research project concerned with the possible association of the blood groups to disease which is in progress at the University Hospitals, was described in this journal,[1] and the results obtained from the time the project was begun in 1955, were summarized. The methods which are being used were described in detail in previous communications.[1, 2, 3, 4, 5] Since 1958, the methods employed in the analysis of the data have been improved through the use of digital computers which increase the precision and the efficiency of the statistical evaluation of the findings in the project. This was made possible by three programs written for the project by Dr. John Edwards, a geneticist and biometrician now a lecturer at the University of Birmingham, in England, who served as a consultant to the project during 1961 and 1962.

Hundreds of physicians in Iowa and the adjacent states have participated in the project by drawing blood and completing questionnaires. Mailing tubes are sent to the immediate relatives of the patients. The tubes contain a glass tube for a blood specimen, a questionnaire to be completed concerning the relative by the home physician, an explanatory letter addressed to the physician, and a stamped and addressed return label. More than 15,000, or about two thirds, of the mailing tubes sent out have been returned to the project laboratory in Iowa City.

The principal investigator (JAB) takes this opportunity of expressing his appreciation for the valuable help of physicians who have generously contributed their time and interest to the project, without which the sibling studies would have been impossible. With few exceptions, no fee has been charged. It has been heart-warming to find that so many busy physicians feel that the project is deserving of their help and it is the intent of this communication to provide them a progress report and a statement concerning the present status of the project.

PHASE I: PEPTIC ULCERATION AND GASTRIC CARCINOMA

The first objective of the project was to obtain an answer to the question: Is there an association between peptic ulceration, gastric carcinoma and the ABO blood groups in the Iowa population? In order to answer this question, the ABO blood group frequencies of patients with peptic ulceration and gastric carcinoma were compared with the blood type frequencies of a random sample of the healthy population from which the patients came (blood donors). The data which have been collected since 1958 from the continuing prospective studies at the University and Veterans Administration Hospitals in Iowa City, and the data recorded in the 1958 report which were obtained by retrospective review of hospital records are recorded in Table 1. Note the substantial increase in the total volume of the data since 1958.

In the statistical evaluation of the 1958 data, a pooled random sample of 6,313 blood donors from University Hospitals, Iowa City, and Iowa-Methodist Hospital, Des Moines, were used as controls. A report dealing with the controls used in blood-group disease researches has been published.[6] The results of the study of the controls indicated that the blood donors who were used as controls in 1958 were not as reliable for this purpose as a

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larger sample of about 50,000 University Hospitals blood donors collected as random samples of 2,000 to 3,000 from each of 17 years. The latter have been used as controls in subsequent studies, and are included in Table 1.

In general, additional support for the ABO blood group disease association has been provided by the data which has accumulated, 1958 to 1962. The evidence indicating an association between duodenal, gastric ulcer and the ABO blood groups characterized by an increased incidence of these disorders in persons of blood type O, is stronger in 1962 than in 1958. ($P < .0001$). Because of the overwhelming evidence provided by worldwide studies consistent with these findings, it is reasonable to reject the null hypothesis of no ABO blood group association for these disorders. In addition to the increased incidence in persons of blood type O, the findings now indicate a statistically significant reduction in the incidence of peptic ulceration in persons of types A, B and AB. Similar associations appear to exist for duodenal and gastric ulcer. The lower levels of statistical significance for the findings in gastric ulcer may mean that the association is not as strong as in duodenal ulcer, or may merely reflect the smaller volume of data. As regards gastric carcinoma, in contrast to peptic ulcer, the data accumulated between 1958 and 1962 does not provide additional support for the ABO association which is characterized by an increased incidence of the disorder in persons of type A, ($P < .05$). However, the findings in similar studies throughout the world, consistently indicating an increased incidence of gastric carcinoma in persons of type A, are of sufficient volume and statistical significance to justify rejection of the null hypothesis in this disorder also.

PHASE 2: OTHER DISORDERS

The second objective of the project is to investigate the possibility of the association of ABO blood groups to other disorders. The results of the retrospective studies reported in 1958 suggested ABO blood group associations in several other disorders. In Table 2 are recorded some of the findings reported in 1958 and those accumulated from 1958 to 1962. When, as for example in rheumatic fever, both 1958 and 1962 data are indicated, the 1962 total is composed of 1958 data plus the data collected during the interval 1958 to 1962. The 1958 findings suggested an increased incidence of pernicious anemia in persons of blood type A, of hip fractures in persons of blood type A, psychoses in persons of blood type O, rheumatic fever in persons of blood types A and AB, and possibly an increased incidence of lung carcinoma in persons of blood type O. The status of the pernicious anemia, hip fracture and psychosis associations remains unchanged, since no additional data have been collected. An ABO blood group association for pernicious anemia indicated by the Iowa project has been confirmed by findings reported by other investigators. More support for an ABO association in rheumatic fever has been provided by additional retrospective and prospective studies. Now, however, as a result of the additional data, it appears that the association is primarily characterized by a decreased incidence of the disorder in persons of non-O blood types, rather than an increased incidence of the disorder in persons of type A and AB as was suggested by the 1958 findings, Table 2. The rheumatic fever findings have been confirmed by other workers.[7] The evidence favoring an ABO association in carcinoma of the

TABLE 1

BLOOD TYPE

	O		A		B		AB	
	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.
CONTROLS								
49,979	44.8		42.3		9.4		3.5	
PATIENTS								
Duodenal Ulcer								
1958 (1301)	53.7	+8.9	36.3	−6.0	7.8	−1.6	2.2	−1.3
1962 (2386)	54.0	+9.2	34.6	−7.7	9.0	−0.4	2.4	−1.1
Gastric Ulcer								
1958 (469)	52.9	+8.1	39.0	−3.3	5.5	−3.9	2.6	−0.9
1962 (817)	53.5	+8.7	36.4	−5.9	7.1	−2.3	3.0	−0.5
Gastric Carcinoma								
1958 (908)	42.2	−2.6	45.8	+3.5	9.2	−0.2	2.8	−0.7
1962 (1158)	43.0	−1.8	44.7	+2.4	9.4	0	2.9	−0.6

The ABO blood group frequencies of the controls (blood donors), duodenal and gastric ulcer and gastric carcinoma patients, 1958 and 1962 (the latter are composed of the 1958 data plus data accumulated, 1958-1962).

TABLE 2

BLOOD TYPE

	O		A		B		AB	
	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.
CONTROLS								
49,979	44.8		42.3		9.4		3.5	
PATIENTS								
Rheumatic Fever								
1958 (254)	39.4	−5.4	44.5	+2.2	10.2	+0.8	5.9	+2.4
1962 (752)	40.0	−4.8	45.7	+3.4	9.8	+0.4	4.5	+1.0
Lung Carcinoma								
1958 (395)	51.1	+6.3	36.5	−5.8	8.4	−1.0	4.0	+0.5
1962 (538)	49.8	+5.0	36.8	−5.5	9.7	+0.3	3.7	+0.2
Congenital Heart Disease								
1958 (327)	47.7	+2.9	42.2	−0.1	6.7	−2.7	3.4	−0.1
1962 (467)	46.3	+1.5	43.2	+0.9	7.5	−1.9	3.0	−0.5
Diabetes Mellitus								
1962 (1324)	44.5	−0.3	42.5	+0.2	10.6	+1.2	2.4	−1.1
Intracranial Neoplasms								
1962 (565)	43.5	−1.3	47.4	+5.1	7.6	−1.8	1.4	−2.1
Portal Cirrhosis								
1962 (273)	46.2	+1.4	40.3	−2.0	10.6	+1.2	2.9	−0.6
Other Cirrhosis								
1962 (62)	45.2	+0.4	45.2	+2.9	4.8	−4.6	4.8	+1.3
Staphylococcal Septicemia								
1962 (156)	48.7	+3.9	36.5	−5.8	13.5	+4.1	1.3	−2.2
Esophageal Carcinoma								
1962 (232)	39.6	−5.2	43.1	+0.8	13.4	+4.0	3.9	+0.4
Pancreas Carcinoma								
1962 (525)	41.1	−3.7	42.5	+0.2	11.8	+2.4	4.6	+1.1
Cervix Carcinoma								
1962 (976)	44.9	+0.1	44.7	+2.4	8.5	−0.9	1.9	−1.6
Corpus Uteri Carcinoma								
1962 (541)	49.9	+5.1	39.7	−2.6	6.7	−2.7	3.7	+0.2
Ovarian Carcinoma								
1962 (445)	41.1	−3.7	43.4	+1.1	11.5	+2.1	4.0	+0.5

The ABO blood group frequencies of the controls (blood donors) and patients with a variety of diagnoses, 1958 and 1962. (The latter are composed of the 1958 data plus data accumulated, 1958-1962.)

lung is now stronger, but an association is still not to be regarded as established, for the published results of other investigators do not suggest an ABO blood group association in this disease.[8, 9] Collection of data from patients with this disorder continues. Note that the addition of 140 patients with congenital heart disease has resulted in an even closer agreement between the blood group frequencies of patients and the blood group frequencies of the controls than was true for the original 367 patients. There is no indication of an ABO association to congenital heart disease.

When the project laboratory was established and prospective studies were begun in 1957, we began to collect data from diabetes mellitus patients. These data have now been statistically evaluated and are included in Table 2.[10] The findings which have borderline statistical significance suggest that the incidence of this disorder is increased in persons of type B, and decreased in those of blood group AB. The findings differ from those reported by other investigators, which in turn differ with each other. In light of this lack of agreement among the results reported by independent investigators, the probability of a diabetes mellitus ABO blood group association is not strong. The increased incidence of intracranial neoplasms in persons of blood type A is of borderline statistical significance.[11] The results of similar studies conducted by other investigators have not been re-

ported. The ABO blood group frequencies of patients with cirrhosis (portal and other) and staphylococcal septicemia do not significantly differ from those of the controls. Again, there are no similar data with which these may be compared.

Data concerning carcinoma of the esophagus, pancreas, uterus and ovaries were obtained by retrospective studies of the records of University and Veterans Administration Hospitals in Iowa City and from the records of 26 additional hospitals located in Iowa and Illinois which made medical records and record room facilities available to us. Woolf has described a method which makes it possible to combine and statistically to analyze data collected by independent investigators.[12] When this is done, one can find evidence of associations which are not evident when the data collected by the independent investigators are evaluated separately. Carcinoma of the esophagus and pancreas are examples of the latter. Our findings indicate a decreased incidence of esophageal carcinoma in persons of blood type O, and an increased incidence of the disease in persons of the three other types, especially in persons of type B. None of these findings are statistically significant, but, when our findings are combined with those reported by other investigators and analyzed by the method of Woolf, the decrease in the incidence in persons of blood type O and increase in persons of type B, are statistically significant. In pancreatic carcinoma, our findings suggest a decrease in the incidence in persons of blood type O, and increases in incidence in persons of the three other blood types, again the most marked increased incidence being in those of blood type B. The findings have borderline statistical significance. When these data are combined with other available data, strong statistical evidence emerges suggesting an association for this disorder.

Helmbold reported findings suggesting an ABO association in carcinoma of the female genital organs characterized by an increased incidence in persons of blood type A.[13] These data were obtained from a survey conducted in West Germany. Helmbold's findings are relevant to our results which suggest an increased incidence of carcinoma of the cervix in persons of blood group A. It is not permissible to combine our data with Helmbold's because of the differences in the way the data were collected, in the controls and in the methods of statistical analysis which have been used.

The findings in carcinoma of the body of the uterus are of interest in view of the findings in carcinoma of the cervix. They suggest an increased incidence of the disorder in persons of blood type O. Our findings in carcinoma of the cervix and carcinoma of the body of the uterus are statistically significant when they are compared with the controls or with each other. However, if the cervix and uterine body findings are combined and compared with the controls, there is no evidence of an ABO blood group effect. This "cancellation" effect in carcinoma of the cervix and body of the uterus may explain the fact that no ABO blood group association was suggested by the results of studies reported by other investigators in which no distinction was made between these two lesions. Observe that in 445 patients with ovarian carcinoma, the incidence of the disease was decreased in persons of type O and increased in those of type A, but the findings are not statistically significant. Helmbold's data were obtained from patients with carcinoma of the cervix, corpus uteri and ovaries. If blood group associations exist for these disorders, as suggested by our work, his finding of an overall increase in group A can be explained by much larger numbers of patients with carcinoma of cervix and ovaries than with carcinoma of the corpus uteri.

In 1958, a unique opportunity was provided us to investigate blood group associations in the multiracial population of the Union of South Africa. The results of a study which the principal investigator conducted at the Department of Surgery at the University of Natal Medical School, in Durban, are summarized in Table 3.[14, 15] These data illustrate the necessity of obtaining controls for each patient population studied. Note the differences in the ABO blood group frequencies of the three sets of controls used to evaluate the South African data. It was not possible to obtain satisfactory controls from the colored population. The mean blood group frequencies for all colored patients were used as controls. The South African findings in peptic ulcer and gastric carcinoma are consistent with those in the Iowa and St. Louis studies (the latter a Negro population study),[16] and therefore they provide additional support for a cause-and-effect rather than an anthropological or specious explanation for the ABO association in these disorders.

Statistically significant evidence was found of an ABO association in Bantu patients with tuberculosis, characterized by an increased incidence of the disease in persons of blood type O. A retrospective study of this disorder is in progress at the University Hospitals. It is possible that studies of tuberculosis may help us to gain some understanding of the nature of the ABO blood group association. This is suggested by retrospective epidemiologic studies in plague, smallpox and syphilis, the results of which suggest that susceptibility to these diseases may be, or may have been, related to blood type.[17, 18] The authors speculate that susceptibility or immunity related to specific blood groups constituted a selecting mechanism in populations which were subjected to epidemics of these relatively lethal diseases. This thesis is supported by the ABO blood group frequencies which exist today in the areas where epidemics of these diseases have occurred. These speculations prompted our study of tuberculosis, which is one of the

TABLE 3

SOUTH AFRICAN DATA

	O		A		B		AB	
	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.
CAUCASIAN								
Controls (6,431) 45.0			39.8		11.4		3.8	
Patients								
Gastric								
Carcinoma (156) ..42.3		− 2.7	42.3	+ 2.5	13.5	+2.1	1.9	−1.9
Peptic Ulcer (290) ...52.4		+ 7.4	36.5	− 3.3	9.7	−1.7	1.4	−2.4
Esophageal								
Carcinoma (21) ...28.5		−16.5	61.9	+22.1	4.8	−6.6	4.8	+1.0
BANTU								
Controls (7,105) 45.0			28.5		21.5		5.0	
Patients								
Gastric Carcinoma (96) 37.5		− 7.5	41.7	+13.2	16.7	−4.8	4.1	−0.9
Peptic Ulcer (92) 52.2		+ 7.2	30.4	+ 1.9	15.2	−6.3	2.2	−2.8
Diabetes Mellitus (23) 43.5		− 1.5	34.8	+ 6.3	21.7	+0.2	0	−5.0
Rheumatic Fever (70) 48.6		+ 3.6	34.3	+ 5.8	14.3	−7.2	2.8	−2.2
Psychosis (881) 38.9		− 6.1	34.8	+ 6.3	20.1	−1.4	6.2	+1.2
Esophageal								
Carcinoma (112) ..36.6		− 8.4	29.5	+ 1.0	28.6	+7.1	5.3	+0.3
Tuberculosis (939) ...39.3		− 5.7	29.4	+ 0.9	22.8	+1.3	8.5	+3.5
INDIAN								
Controls (7,462) 37.4			23.1		33.3		6.2	
Patients								
Gastric Carcinoma (18) 31.5		− 5.9	37.0	+13.9	31.5	−1.8	0	−6.2
Peptic Ulcer (162) ...33.3		− 4.1	21.6	− 1.5	34.6	+1.3	10.5	+4.3
Diabetes Mellitus (60) 30.0		− 7.4	25.0	+ 1.9	40.0	+6.7	5.0	−1.2
Rheumatic Fever (73) 30.1		− 7.3	30.1	+ 7.0	34.3	+1.0	5.5	−0.7
Psychosis (142) 38.7		+ 1.3	22.5	− 0.6	33.9	+0.6	4.9	−1.3
Tuberculosis (111) ...37.8		+ 0.4	18.9	− 4.2	34.2	+0.9	9.1	+2.9
COLORED								
Controls (352) 35.8			37.2		23.3		3.7	
Patients								
Gastric Carcinoma (56) 33.9		− 1.9	42.8	+ 5.6	17.8	−5.5	5.5	+1.8
Peptic Ulcer (67) 43.9		+ 8.1	27.2	−10.0	24.2	+0.9	4.7	+1.0
Psychosis (75) 29.3		− 6.5	46.7	+ 9.5	24.0	+0.7	0	−3.7
Esophageal								
Carcinoma (27) 40.7		+ 4.9	33.3	− 3.9	26.0	+2.7	0	−3.7
Tuberculosis (127) ...34.6		− 1.2	35.4	− 1.8	24.5	+1.2	5.5	+1.8

The ABO blood group frequencies of the controls and patients included in the South African study.

few remaining bacterial or viral caused diseases for which it is possible to investigate the possibility of an ABO blood group association. A study of poliomyelitis is being carried out for the same reason.

The South African findings provide additional support for the association in carcinoma of the esophagus. An interesting and confusing finding in the South African studies was the statistically significant increased incidence of psychoses in Bantu persons of type A. In view of our findings of an increased incidence in persons of blood type O among psychiatric patients in Iowa,[11] there is need for a similar study in American Negroes. The South African findings in patients with diabetes mellitus and rheumatic fever were inconclusive.

THE PROBLEM OF CONTROLS

Perhaps the most important criticism of the blood-group disease researches concerns the controls which have been used to evaluate the data. Blood donors and the patients at University Hospitals, Iowa City, are relatively homogeneous ethnically and racially, compared with the blood donors, the other kinds of controls and the patients studied by other investigators. This homogeneity results from the fact that the blood donors and patients come from a single geographic area and are frequently related. Nevertheless, it is possible inadvertently to select blood donors from a different stratum of the population from the patient's. For example, if the blood donors were composed chiefly of persons with a high frequency of blood type A, and a low frequency of type O, differences between their blood type frequencies and those of the duodenal ulcer patients having a low frequency of A and high of O, would be specious. The differences would reflect an anthropologic rather than a cause-and-effect mechanism.

Siblings of the patients free from the disease in question provide another source of controls which may be used in evaluating the data. The possibility of anthropologic factors causing an apparent but specious association of blood group to disease is eliminated, since the patients and their unaffected siblings (controls) are ethnically and racially homogeneous. The results of the sibling studies which have been done with the assistance of many physicians in Iowa and neighboring states have been published.[4, 19] The ABO blood group frequencies of duodenal and gastric ulcer, gastric carcinoma, diabetes mellitus and rheumatic fever patients have been compared with the ABO frequencies of their unaffected siblings. In each disease, the findings were consistent with the association suggested by the comparison of the patient and blood donor (control) ABO blood group frequencies. Thus, the sibling studies provide important support for the concept that the ABO blood group association is one of cause and effect.

NEW AND ADDITIONAL STUDIES

The sibling and other family data provide an attractive opportunity for studies of maternal fetal liability and blood group gene linkage. In addition to the ABO, Rhesus and MN blood groups, the Kell and Duffy blood groups have been determined in both the patients and their relatives. Tentative protocols have been developed for these two studies. Dr. Edwards is currently working on a program which will be used to analyze the data. The family data which has been recorded on IBM cards may prove to be a valuable source of material for other studies in human genetics.

Since there is no prima-facie reason excluding disease associations for blood group systems other than the ABO, there was a need to investigate this possibility. Time-consuming and relatively expensive studies were necessary, since the Rhesus genotypes, the MN and other blood groups are not determined routinely in usual blood-bank practice. It was therefore impossible to obtain data by retrospective review of medical records, as was feasible in the ABO studies. The results obtained from the prospective studies of the Rhesus and MN blood groups, begun in 1957, are summarized in Table 4.[20] The controls were the healthy spouses of patients and hospital personnel. The frequencies of the probable Rhesus genotypes and the MN blood types in the controls agree fairly well with the sparse data available for comparison.

Statistically significant increases were found in the frequencies of R_1R_2 presumptive genotypes in patients with duodenal and gastric ulcer, of R_1R_2 genotypes in gastric carcinoma, and of R_2r, $r'r''r$ and NN genotypes in rheumatic fever patients. In addition, there was a statistically significant reduction in the frequency of R_2r and R_1r genotypes in the gastric carcinoma patients. There were no significant differences between the controls and the Rhesus genotypes and the MN blood types of patients with diabetes mellitus.

These findings were of particular interest for two chief reasons. First, note that the magnitude of the differences between the blood type frequencies of the patients and the controls are larger than those noted in most of the ABO studies. As a result, even though the numbers of the controls and patients were smaller than those in the ABO studies, the levels of significance were of comparable magnitude. Second, if these findings were confirmed by similar studies done by other investigators in populations differing ethnically and racially, they would require a major revision in our thinking concerning the blood-group disease associations. Heretofore no convincing evidence of an association of a disease to a blood group had been found for any except the ABO blood group system.

It has now been established that the findings in duodenal and gastric ulcer, and probably in gastric carcinoma and rheumatic fever, reflect an effect resulting from the transfusion of Rhesus-positive and MN-incompatible red blood cells.[21] This occurs commonly, since the usual blood banking procedures do not involve the determination of the Rhesus-positive and the MN blood groups. Following such a transfusion, the agglutinogens present in the transfused cells are detected when the recipient's blood is typed. This "apparent" transmutation of the recipient's blood type may last as long as 90 days. In Table 5 the Rhesus and MN blood group frequencies of the duodenal and gastric ulcer patients who received blood transfusions 90 days or less prior to the typing done for the project, the blood group frequencies of the patients not so transfused and those of the controls are recorded. Observe the fairly close agreement between the Rhesus and MN frequencies of the non-

TABLE 4

	Controls	Duodenal Ulcer		Gastric Ulcer		Gastric Carcinoma		Rheumatic Fever		Diabetes Mellitus	
	%	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.
Total Number	2,181	1,029		348		170		538		1,153	
R_1R_1	17.51	13.31	−4.20	14.94	−2.57	12.35	−5.16	15.06	−2.45	15.26	−2.25
R_1r	33.15	33.82	+0.67	33.05	−0.10	35.30	+2.15	32.16	−0.99	32.52	−0.63
R_1R_2	13.89	22.06	+8.17	20.69	+6.80	21.76	+7.87	14.50	+0.61	16.22	+2.33
R_2r	14.63	13.02	−1.61	11.78	−2.85	7.65	−6.98	18.03	+3.40	13.53	−1.10
R_0r	4.17	3.60	−0.57	4.02	−0.15	2.35	−1.82	4.08	−0.09	4.25	+0.08
rr	15.50	13.22	−2.28	14.08	−1.42	19.41	+3.91	13.38	−2.12	16.92	+1.42
(r'r'')r	1.15	0.97	−0.18	1.44	+0.29	1.18	+0.03	2.79	+1.64	1.30	+0.15
Total Number	2,186	1,030		348		170		540		1,153	
M	26.85	26.50	−0.35	25.86	−0.99	23.53	−3.32	23.70	−3.15	26.19	−0.66
MN	55.26	56.41	+1.15	57.18	+1.92	61.18	+5.92	52.60	−2.66	53.25	−2.01
N	17.89	17.09	−0.80	16.95	−0.94	15.29	−2.60	23.70	+5.81	20.56	+2.67

Rhesus and MN blood group percentages of the controls and patients; differences in the blood group percentages of the patients from the blood group percentages of the controls.

TABLE 5

	Controls	Duodenal Ulcer Transfused		Duodenal Ulcer Non-Transfused		Gastric Ulcer Transfused		Gastric Ulcer Non-Transfused	
	%	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.	%	Diff. % From Cont.
Total Number	2,181	243		897		102		263	
R_1R_1	17.51	7.00	−10.51	14.60	−2.91	7.84	− 9.67	18.25	+0.74
R_1r	33.15	26.34	− 6.81	34.67	+1.52	29.41	− 3.74	34.22	+1.07
R_1R_2	13.89	39.92	+26.03	18.17	+4.28	42.16	+28.27	10.65	−3.24
R_2r	14.63	7.41	− 7.22	13.94	−0.69	5.88	− 8.75	12.93	−1.70
R_0r	4.17	3.70	− 0.47	3.34	−0.83	0.98	− 3.19	6.08	+1.91
rr	15.50	13.58	− 1.92	14.50	−1.00	12.75	− 2.75	17.11	+1.61
(r'r'')r	1.15	2.05	+ 0.90	0.78	−0.37	0.98	− 0.17	0.76	−0.39
Total Number	2,186	244		897		101		264	
M	26.85	17.62	− 9.23	30.10	+3.25	16.83	−10.02	30.68	+3.83
MN	55.26	75.41	+20.15	51.17	−4.09	75.25	+19.99	50.38	−4.88
N	17.89	6.97	−10.92	18.73	+0.84	7.92	− 9.97	18.94	+1.05

Rhesus and MN blood group percentages of the controls and transfused and non-transfused duodenal and gastric ulcer patients; differences in the blood group percentages of the patients from the blood group percentages of the controls.

transfused patients and the controls, both differing sharply from the frequencies of the transfused patients. The volume of the data permits the tentative conclusion that the null hypothesis has been confirmed and that there is no association between the Rhesus and MN blood groups and duodenal and gastric ulcer. Because of these findings, it is probable that when the studies are complete, we shall find that a transfusion effect likewise explains the findings suggesting Rhesus and/or MN blood group associations in gastric carcinoma and rheumatic fever.

For the past two years, prospective studies have been in progress in patients with gallbladder disease, all types of hernia, varicose veins and hemorrhoids. It is generally agreed that genetic factors play roles of varying importance in these disorders. Insufficient data have accumulated at the time of preparation of this report to let us speculate profitably concerning the results of these prospective studies.

PHASE 3: MECHANISMS UNDERLYING THE ASSOCIATIONS

The findings just described establish that an association exists between the ABO blood groups and some disease processes. The objectives of the third phase of the project are to examine the nature of the association and to search for the mechanisms which underlie it. The "transfusion effect" which was responsible for the statistically significant evidence suggesting disease associations for the Rhesus and MN blood groups is such a mechanism. As of this writing, no mechanism has been uncovered to explain the ABO blood group-disease association.

The findings in peptic ulcer and gastric carcinoma suggested the possibility that the secretion of the mucopolysaccharide blood-group substances in gastric juice or saliva might be involved. Approximately 80 per cent of all individuals secrete blood-group substance in a water soluble form in their body fluids. Studies were undertaken to investigate the possibility that the secretion of blood-group substances plays a role in associations between the ABO blood groups and diseases.

The working hypothesis is well illustrated by the findings in peptic ulceration. The increased incidence of the disorder in individuals of blood type O might be related to the failure of O-group persons to secrete either A or B blood-group substances in their body fluids. A or B or H blood-group substance could provide a mechanical, biochemical or immunologic barrier against acid-peptic and other ulcer-inducing factors. The association in gastric cancer to blood group A could possibly be related to a carcinogenic effect of blood-group substance A.

The results of our studies of the secretion of blood-group substance in saliva, which have been reported elsewhere, can be summarized as follows.[5] The incidence of duodenal ulceration is significantly increased in non-secretors of the ABO(H) blood-group substances; the findings are in keeping with the hypothesis suggested in the previous paragraph. There was no statisticaly significant evidence of an association between ABO(H) secretion and gastric ulcer, gastric carcinoma or diabetes mellitus. The findings are consistent with those reported by other investigators.

The findings in rheumatic fever are of interest. There is a suggestion that the incidence of the disorder is increased in non-secretors of ABO(H) blood group substances. However, the differences between the patients and the controls are not as great as those found in duodenal ulcer, and are not statistically significant. However, when the rheumatic fever findings are combined with the results obtained by other investigators, statistically significant differences emerge which support the concept that the incidence of this disorder is increased in non-secretors.[7]

The explanation for the ABO(H) saliva secretion findings in peptic ulcer and rheumatic fever is not known. There has been no positive evidence supporting the hypothesis that the mucopolysaccharide blood-group substances provide a protective barrier for the mucous membrane of the stomach and/or the duodenum. This hypothesis does not seem relevant to the findings in rheumatic fever. A more reasonable hypothesis regarding this disorder is that both the ABO blood group and the secretion findings are related, in some non-understood way, to the immunologic mechanisms which appear to play a role in the pathogenesis of rheumatic fever.

The secretion of the mucopolysaccharide blood-group substances as it is related to the ABO blood group disease associations, we are studying in another way in collaboration with Dr. Jerzy Glass of New York Medical College. Twelve-hour fasting night secretion studies, followed by one-hour histamine tests are being performed in Iowa City on selected groups of patients. The amount of free HCl is measured and the titer of blood-group substances present is determined by the isohemoagglutination test. After suitable processing, an aliquot is then sent in the frozen state to Dr. Glass. Biochemical and electrophoretic studies are done in his laboratory, and the gastric juice samples are fractionated by column electrophoresis. The objectives of this study include the determination of the biochemical characteristics of the mucopolysaccaharide blood-group substances and their physiologic activity, with particular reference to the blood group disease associations.[21]

SUMMARY

The present status of the project designed to investigate the association between blood groups and

disease, which has been in progress at the University Hospitals since 1957, has been described. The results obtained thus far estabish that associations exist between certain diseases and the ABO blood groups and the secretion of ABO(H) blood-group substances. No satisfactory explanation of the mechanisms underlying the blood group disease or blood group secretion associations has as yet been provided. Unfinished studies which it is hoped may throw some light on this important question have been described. Convincing evidence has been obtained suggesting that there are no similar blood group associations for the Rhesus and MN blood groups to the diseases studied.

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Health Care Costs, 1962

The annual compilation of consumer expenditures for health services, this one covering 1962, has appeared in the December, 1963, issue of SOCIAL SECURITY BULLETIN. The authors, as in previous instances, are Louis S. Reed and Dorothy P. Rice, of the Division of Research and Statistics, Social Security Administration.

Previously-established trends are shown to have continued. Private consumer expenditures in 1962 totaled $21.9 billion, of which 27.8 per cent went into hospital care; 26.5 per cent for services of physicians; 18.9 per cent for drugs; 10 per cent for dental care; and the remaining 16.8 per cent for health insurance, nursing-home care and other professional services.

Back in 1948, drugs took 19 cents from each health dollar, and drugs took the same share in 1962. But the part for hospital care is shown to have risen from 22 to 28 cents in the same length of time. For doctors' services, the share has dropped from 33 to 27 cents, and for dental care, from 12 to 10 cents. On a per-capita basis, private consumer expenditures were $119.44 in 1962, compared with $52.79 in 1948.

Premium payments for health insurance aggregated $7.6 billion, in 1962. Of that sum, 41.2 per cent went to Blue Cross and Blue Shield plans, and 52.4 per cent to commercial carriers. Benefits amounted to $6.5 billion, or about 85 per cent of premium income. Voluntary health insurance met some 30 per cent of the 1962 health-care bill—nearly four times as large a share as it had covered in 1948.

Health-Insurance Figures for 1963

According to newly released Health Insurance Institute statistics, 77 per cent of the civilian population of the U. S.—145 million persons—held some health-insurance coverage in 1963. Paid-out benefits totaled an estimated $7.8 billion, or $700 million more than in the previous year. Major-medical coverage continued to be the fastest-growing type. This kind of protection was held by 41.5 million Americans in 1963.

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CLINICAL SUMMARY

A 49-YEAR-OLD WHITE MALE was first admitted to the University Hospitals for multiple fractures following an automobile accident. He had a fracture of the left scapula, fractures of both ankles, and fractures of both bones of the right forearm. The latter fractures were treated by open reduction. Approximately two months later, after an alcoholic episode in which he reinjured his forearm, with distraction of the ulnar fragments, it was discovered that he was a chronic alcoholic.

Two years later, when he was transferred here from another hospital, the following history accompanied him: "The patient first became ill 19 days previously, with pain in the right upper quadrant of the abdomen and right lower chest, with a temperature elevation to 105° F. and with a white blood cell count of 20,000/cu. mm. His hemoglobin on that date was 12.6 Gm., with a hematocrit of 39. On the following day, the chest pain had disappeared and the abdominal pain had shifted to the right lower quadrant, but no rebound tenderness was noted. His white blood count on this day was 16,500/cu. mm., his serum glutamic oxaloacetic transaminase was 69 units, and his blood amylase was 50 units. A chest roentgenogram was interpreted as normal. An exploratory laparotomy was carried out, at which time the liver and gall bladder areas were extensively explored and found to be normal. An appendectomy was performed, and the histologic report was that of "subsiding appendicitis." Postoperatively, the patient continued to spike a fever daily, and the white blood cell count remained high. The cephalin flocculation test was 4+ on the third postoperative day. On the fourth postoperative day the patient became icteric, and the SGOT was 216 units. Intravenous Chloromycetin was started the following day, in a dosage of 2 Gm. daily. A right pleural effusion was noted on the next day. On this date, his hemoglobin level was noted to be 10.8 Gm./100 ml., his white blood cell count was 19,300/cu. mm., and his bilirubin was 5.2 direct and 3.7 indirect. Alkaline phosphatase was 7.5 units, and blood amylase 72 units. The SGOT was 296 units on the ninth postoperative day. Repeated blood cultures were reported as negative. On the day of transfer to the University Hospitals, it was noted that his blood hemoglobin level was 7 Gm./-100 ml., and his white blood cell count was 5,300/-cu. mm. The bilirubin was 2.6, both direct and indirect, and the SGOT was 170 units. He was given two units of whole blood by transfusion. His jaundice was decreasing in intensity, but the patient continued unresponsive and lethargic, and appeared to be developing a right parotitis. A nasogastric tube was placed because of hypoactive bowel sounds."

When the patient entered the University Hospitals, he denied hematemesis, vomiting, diarrhea or melena, but did complain of an absence of bowel movements for several days, and of an accompanying abdominal distention. He complained of diffuse pain in the left lower and left upper quadrants. He also complained of shortness of breath. He said that he had received nothing to eat for several days.

On physical examination he was found to be acutely and gravely ill, with a body temperature of 99° F. rectally, a blood pressure of 90/40 mm. Hg, and a pulse rate of 120/min. There was a suggestion of a flapping tremor of the hands. His breath seemed to have a fruity odor. Icterus was plainly visible in the skin, and numerous ecchymoses and petechiae were noted over his body. There was a tender swelling involving the right parotid gland, and an active thrombophlebitis of the left arm. Decreased breath sounds were present over the right lower lung field, with dullness to percussion in this area. The left lung field was clear to auscultation and percussion. A pericardial friction rub was audible along the left sternal border. The abdomen was slightly distended, and a positive fluid wave was noted, along with dullness in the flanks. No bowel sounds were audible. Right upper and left lower quadrant tenderness was present, with maximal tenderness in the left lower quadrant. There was a suggestion of rebound tenderness in the left lower quadrant and right upper quadrant, but no rigidity was noted. No masses were palpable.

The blood hemoglobin level was 10 Gm./100 ml.,

and the white blood count was 6,900/cu. mm. with a differential blood smear showing 8 bands, 77 segmental leukocytes, 14 lymphocytes and 3 monocytes. The urine showed bile, but was negative on other chemical tests or microscopic examination. The blood urea nitrogen was 100 mg. per cent, creatinine 2.2 mg. per cent, and CO_2 21.8, sodium 163, potassium 4 and chlorides 104 mEq/L. The serum albumin was 2.5 and the serum globulin 2.1 Gm. per cent. The prothrombin time was 20.1 with a control of 13.3 seconds. Bilirubin was 3.7 mg. per cent in one minute and 7.2 mg. per cent in 30 minutes. The blood amylase was 165 Somogyi units, the bleeding time was 2 minutes and 45 seconds, and the clotting time was 3 minutes. Roentgenograms of the chest showed elevation of the right hemidiaphragm, with changes at the right base consistent with a subdiaphragmatic abscess. Fluoroscopy of the diaphragm revealed complete immobility of the right hemidiaphragm. Roentgenograms of the abdomen showed a haziness which was apparently due either to fluid within the bowel or to ascites, with gas in the transverse colon and none in the rectum. No significant small bowel gas was seen, and no fluid levels were noted. A needle aspiration of the right subphrenic space revealed pus. Over the next four hours, the patient was given intravenous fluids, a blood transfusion and intravenous vitamin K_1. He was then operated upon, at which time the right subphrenic space was drained, and 400 cc. of purulent material was removed. This eventually cultured Escherichia coli, paracolon organisms and Pseudomonas aeruginosa. Nine hours following admission, the patient's blood pressure dropped to 60/0 mm. Hg. A third blood transfusion was started, and along with ephedrine, it brought the pressure up to 80/0 mm. Hg. However, the patient deteriorated progressively, and expired one hour later.

CLINICAL DISCUSSION

Dr. S. E. Ziffren, Surgery: Mr. Eggers will represent the students this morning.

Mr. R. Eggers, junior ward clerk: The jaundice and fever can represent amebic hepatitis, viral hepatitis, leptospirosis, bacteremia, malaria, yellow fever, or pneumococcal pneumonia. On the basis of the other findings, however, we didn't think these plausible. We believe the pleural effusion suggested a subphrenic abscess, and the laboratory findings, we believe, suggested a hepatocellular jaundice. Jaundice, when present with a subphrenic abscess, is often due to suppurative pylephlebitis of the portal vasculature, which in turn is often encountered following acute appendicitis. We feel the patient's later findings were compatible with liver failure. This may have been secondary to multiple intrahepatic abscesses, or to a liver previously compromised by cirrhosis and unable to cope with the surgical procedures and the complications of appendicitis. The elevated BUN was believed to be an extrarenal azotemia.

In conclusion, although we can't rule out amebic hepatitis, we consider the most plausible course of events leading to this patient's demise to have been acute appendicitis followed by a suppurative pylephlebitis, with an accompanying subphrenic abscess and possible intrahepatic abscess. This was followed by liver failure, and finally by extrarenal azotemia. We believe the patient's death was due to a combination of hepatic failure and toxemia due to a massive infection, with the superimposed stress of surgery.

Dr. Ziffren: Do you wish to ask Mr. Eggers any questions?

Dr. Gius has kindly consented to discuss this case.

Dr. J. A. Gius, Surgery: I'd like to elaborate on some aspects of the process by which I tried to analyze this problem. I think these exercises should be designed to develop the problem-solving approach so that the data available is systematically analyzed, then synthesized and interpreted, in order to bring some degree of understanding of the pathologic findings. The problem would be much simpler if we could take the data provided at face value, but there is always a lot of "pepper on the trail" to misguide and mislead us. Thus we must be skeptical of what has been presented, and we must also try to discriminate between what is relevant and what is irrelevant. It seems to me that much of this protocol was devoted to detailing a host of laboratory values which repeat and reemphasize certain aspects of the problem. If we get too involved in these values, we shall be confused and we shall fail to see the forest because of the trees. And I must confess that the more I have studied this protocol, the more defects I have found in my hypotheses and final diagnosis. But a definite diagnosis is demanded, so I will try to describe my analysis.

It seems to me that several assumptions are necessary. This man of 49, known to be a chronic alcoholic, is most likely to have had some damage of the portal area, which includes the liver, pancreas, gallbladder, bile ducts, etc. Under these conditions I should expect that his impaired organ system would have been particularly vulnerable to all noxious influences, including drugs, toxins, infections, etc. In addition, because the liver is the main chemical factory for the body, what happens to this vital organ affects the entire organism. My second assumption is that the patient was relatively well before the onset of the fatal illness. In other words, this was an acute process which followed an unrelenting, progressive course characterized by deterioration of hepatic functions and leading to death. I think this is an outstanding point in the protocol. My third assumption is that the process was primarily an infectious one. We can consider infection to have been the result of a transfer of septic material from the gastrointes-

tinal tract to the liver or to the region of the liver. Exactly where and how the infection arose is important, and I'll try to elaborate on these aspects as we go along.

Now, certain signs which became apparent immediately after the onset of the illness—specifically, a temperature of 105° F. and a leukocytosis of over 20,000/cu. mm.—appear to be very significant factors in the analysis of this problem. Furthermore, in looking at this whole picture, we must give more relevance to the history during the 19 days when the patient was in the local hospital, and give relatively less weight to the data derived during the 10 hours he was treated at the University Hospitals. Also because he was moribund on admission, it is most difficult for us to evaluate the signs, symptoms and laboratory data. Terminally, the picture was confused by many changes which are remote from the pathophysiologic process that appeared at the beginning.

Now consider for a moment the organ or organ systems which might be incriminated in this problem. The pain was localized initially to the right upper quadrant and the right lower part of the chest. At that time, high fever and leukocytosis were observed. We are not given any clues as to gastrointestinal symptoms such as vomiting, nausea and distention, or to any physical finding which would bear upon the interpretation of this sequence. It would be dangerous to assume there were no other significant signs, for the letter from the local physician is, to my mind, incomplete and omits much important negative information.

In analyzing the onset of pain in the patient's right side, we can approach the problem in terms of the anatomical structures and their pathologic conditions. Thus first, a perforated peptic ulcer in the stomach and duodenum is very likely to produce an acute, catastrophic illness. Ulcer is, of course, quite common in patients addicted to alcohol and in those with hepatic cirrhosis. The next organ system to consider consists of the gallbladder, bile ducts, and liver. They, too, are often involved in cirrhosis and alcoholism, but I would think it improbable that they were the source of trouble in this instance, for the patient was surgically explored, and careful attention was given to those areas. The third region of possible trouble is the pancreas. Now, the pancreas is a retroperitoneal organ, affected principally by an auto-digestive process resulting in acute pancreatic necrosis or hemorrhage. Because of its location, the reaction tends to be somewhat confined, and early signs of peritonitis which could result from extravasation of fluid into the right subphrenic area are not generally expected. Thus, the chest and diaphragmatic pain which this patient had doesn't fit with pancreatitis. I should expect the pain of pancreatic necrosis to be located more in the midline, more to the epigastric region and more in the back. Also, fever is not an early sign in pancreatitis. More often the temperature is low and is associated with the shock syndrome, rather than presenting the picture of sepsis. Finally, the serum amylase tests were consistently within normal limits. Although it is conceivable that pancreatitis may be associated with normal amylase levels or that the amylase had been elevated but fell before the sample was drawn, both possibilities are quite unlikely.

The appendix is certainly suspect in this problem, as Mr. Eggers indicated. I admit pondering at some length over the pathologic report of "subsiding appendicitis." We know that whenever there is any type of extravasation (blood, pus, enzymes, etc.) into the peritoneal cavity, the serosa of the appendix is irritated and becomes inflamed. Perhaps the pathologists referred to this phenomenon. On the other hand, there may actually have been an intraluminal obstruction, a suppuration or even a rupture of the appendix, but this should have been quite apparent to the surgeon and he wouldn't have needed a pathologist to make the diagnosis for him. Thus, we have tenuous evidence of appendicitis in the protocol. Looking at it another way, the clinical history of right upper quadrant pain and fever does not conform to the usual sequence of events in appendicitis. The fact that on the following day there was tenderness in the right lower quadrant doesn't help much either. I suppose one might say that initially, perhaps, the patient's right upper quadrant pain was so intense that he was not aware of pain and tenderness in the right lower quadrant, but that as the right upper quadrant pain decreased, the right lower quadrant pain became dominant, and the signs became more diagnostic. I have thought a great deal about the possibility that appendicitis and its complications—pylephlebitis, extension of the septic process through the portal channels into the liver—produced liver abscesses and rupture of abscesses with subphrenic collection, but they don't quite fit with the initial symptoms and sign that this patient presented.

Now regarding the subsequent course, there was progressive failure of hepatic function, as indicated by jaundice and the persistent and increasing retention of bilirubin. There were other evidences of disturbances in hepatic function: the tendency to bleed into the tissues which correlates with the increase in the prothrombin time, the collection of fluid in serous cavities, a fall in the serum proteins, and the many other lab values included in the protocol.

In summary, I believe this patient had a right subphrenic abscess which, as the protocol says, was drained. The collection, it seems to me, was most likely due to a ruptured peptic ulcer of the acute type that was not discovered at operation. Perhaps it had sealed off at that time. Coupled with this septic process, there was advanced hepatic cirrhosis which could be attributed to chronic alcoholism. Sepsis and liver failure led to death.

Dr. Ziffren: Dr. Van Epps, would you show the X-rays, please?

Dr. E. F. Van Epps, Radiology: Chest roentgenograms taken a day or so before death reveal elevation of the right leaf of the diaphragm, fluid in the pleural sulcus, and an infiltrate in the right base, some of which was due to disc atelectasis. I doubt that it was a subpulmonary effusion, although we have not ruled out this possibility. A decubitus film is helpful in such cases, but since this patient was very ill, only films of the abdomen were done. Films of the abdomen revealed separation of loops of small bowel, a hazy density suggesting ascites, and probably an enlarged liver. The properitoneal fat lines are present. The film indicates only that they have not been obliterated. Pus may be present and not obliterate the lines. There is no evidence of air in an abscess, either subdiaphragmatic, intrahepatic, or subhepatic.

Our impression would be suppuration beneath the diaphragm, with pulmonary and pleural involvement. The most common cause is a subdiaphragmatic abscess, but we have to consider the other possibilities.

Dr. Henry E. Hamilton, Internal Medicine: Dr. Van Epps, can you give us some idea of the location of this abscess? Was it anterior or posterior? I ask this question because an amebic abscess of the liver is often found in a medial and anterior position, and can be suspected on the basis of the configuration of the diaphragm as viewed in the PA and lateral chest films.

Dr. Van Epps: I'm not able to identify where, because I don't see any evidence to indicate either air or gas. The elevation of the diaphragm is uniform, so I am unable to state that it's in front, at the midline, or posterior.

Dr. R. T. Soper, Surgery: Were the bowel loops separated?

Dr. Van Epps: Yes, we felt that they were separated by some intraperitoneal fluid.

Dr. Gius: Considering the type of organisms, would you expect gas in the abscess?

Dr. Van Epps: No, but I just mention this primarily for the students. We do look for air, and in an underexposed film, we sometimes miss air-fluid levels. We have quite a number of cases in which air-fluid levels occur in either subphrenic or subhepatic abscesses.

Dr. Ziffren: Do you want to change your diagnosis after looking at these X-rays, Dr. Gius? No.

Dr. Tammes will give the report from Pathology.

Dr. A. R. Tammes, Pathology: At the time of autopsy, the body demonstrated a moderate icteric tinge. The most pertinent findings were those present in the abdominal cavity. The abdominal wall showed a 13 cm. right rectus incisional scar from the previous appendectomy, and this showed good healing. The peritoneal cavity contained 1,200 ml. of straw-colored fluid that included some flecks of soft, whitish material that were felt to be small fibrin clots. In general, the peritoneal surface was somewhat dulled, and in scattered areas was somewhat roughened. The liver appeared grossly swollen, and weighed 2,550 Gm. The normal weight is approximately 1,700 Gm. Four abscess cavities were found within the right lobe of the liver. These all measured approximately 6-8 cm. in diameter. One of these abscesses was located on the lateral portion of the dome of the liver, two were anterior and inferior to this one, and the final abscess cavity was located in the subdiaphragmatic area posteriorly. The last of these was the one that had been drained by the surgical procedure. It was deflated and contained surgical drainage tubes. The abscess cavities that had not been drained contained very thick, green-colored and very foul-smelling purulent material. There was some exudate over the surface of the liver. Microscopically, the abscess cavities showed necrotic walls with a nonspecific inflammatory reaction and very little fibrosis. The fibrous tissue that was present in the abscess wall consisted mostly of collapsed stroma. There were satellite micro-abscesses very close to the main abscess cavities. The remainder of the liver, in areas removed from the abscesses, showed no evidence of cirrhosis. Mainly it showed some congestion compatible with the course of this patient.

Grossly, the GI tract was not remarkable, except for the area of the cecum. At the site of the previous appendectomy, the appendiceal stump showed very good healing, and there was no evidence of infection in this area. The slides of the appendix that had been removed showed a subsiding appendicitis. In the sub-mucosa, there was edema, and a mild mononuclear cell infiltrate that was also present on the serosal surface. A few cells were also seen in the muscularis. You should remember that at this time the patient had no evidence of any intra-abdominal inflammatory disease, so this was not secondary to the peritonitis that we found at the time of death. The biliary system was completely intact, and no significant abnormalities of any portions of the biliary system were noted. The portal vessels were completely investigated, and all were found to be grossly normal. The cultures that we took at the time of death showed E. coli present in the blood, in the spleen, in the peritoneal fluid, and in the abscess material. Besides E. coli, Pseudomonas aeruginosa was cultured from the spleen, the peritoneal fluid and the abscess cavity.

It is felt that the liver abscesses in this patient were the result of bacteremia of the appendiceal veins secondary to this appendicitis, with subsequent bacterial transport to the liver through the portal veins, and the establishment of these liver abscesses. Death was due to the liver abscesses and the complicating bacteremia. There were several incidental findings, including a small right-pleural effusion of some 300 ml. and septic splenitis. The final diagnosis, then, will include multiple hepatic abscesses secondary to appendicitis, bacteremia, early peritonitis, and a small right-pleural effusion.

Dr. Soper: Was there any pericardial reaction or fluid?

Dr. Tammes: No. I noticed in the protocol that a pericardial friction rub was heard, but the pericardium appeared entirely normal grossly, with the usual small amount of thin, clear fluid.

Dr. Gius: Were there any thrombi in the veins of the portal system?

Dr. Tammes: No. In the sections we had, no thrombus formation was found.

Dr. Gius: Isn't it true that most instances of septic thrombophlebitis developing from appendicitis will show clots in the appendiceal veins?

Dr. Tammes: I think this is probably true, but we do know that it does occur a great number of times without an actual thrombophlebitis. It's considered just a bacterial invasion of a local vein without any real reaction in the vessel, and the bacteria can then be transported to the liver.

Dr. Gius: Then are we to assume that this probably occurs very often?

Dr. Tammes: Yes, because we do know that liver cultures in general show pathogenic organisms, frequently. Thus the liver usually contains organisms capable of setting up an abscess if circumstances are right.

Dr. J. M. Layton, Pathology: Was there an appendiceal abscess at the site of the original operation?

Dr. Tammes: No, there was not.

Dr. Layton: Then I should like to propose for purposes of discussion that the vigorous exploration of the hepatobiliary tract at the time of the first operation predisposed to the subsequent hepatic infection and abscess formation.

Dr. R. T. Tidrick, Surgery: I think Dr. Layton is probably right. In the first place, one should be suspicious when he sees a right rectus incision, for it often indicates that the surgeon went in without a clear idea of where the difficulty lay. He has made an up-and-down type of incision, because he hasn't known whether the difficulty was appendicitis, a peptic ulcer or what. We've often used this approach—in the midline and up and down—in case of gunshot wound, for instance, or when we haven't known what quadrant of the abdomen might be affected. At the time, if the surgeon had a clear impression that the pathology was appendicitis, he almost certainly would have made a McBurney, or one of the other lower oblique or transverse incisions. So this bit of evidence suggests that the appendectomy was, indeed, an afterthought.

Now, there is very good support for Dr. Layton's contention, that manipulation of inflamed and ulcerated areas in the gut may be followed by demonstrable bacteremia in the radicles of the portal system. Workers in this country, in recent years, have taken cultures by means of a fine needle stuck directly into the portal vein at the time of operation upon the biliary tract, and have found, somewhat to their surprise, that in the so-called general exploration—in the massaging and manipulating of various organs in attempts to feel or see something wrong—organisms may be demonstrated in efferent veins, sometimes even with the gut intact. For example, in operating upon patients with ulcerative colitis, one investigator found that blood cultures taken initially from tributaries in the portal system revealed pathogenic organisms in over half of the instances in which such aspiration was done. In the past ten years at this institution, we have cultured the mesenteric lymph nodes in over 90 per cent of the instances in which we have staged a total colectomy for ulcerative colitis. These have shown significant pathogens in the vast majority of cases. Only occasionally have the mesenteric lymph nodes been without bacterial growth.

This case, however, is disturbing. We've bandied about the terms *frequent, rare, common, infrequent,* and so forth, until I'm quite confused. Overall, these complications that we've been discussing today are seldom seen. They are very infrequent. We can't say what percentage of acute appendicitis cases today wind up with this dreadful series of events, but we can say that overall, the incidences of various and sundry complications of appendicitis remain high. With this in mind, I have here the summaries of the last five patients in this institution with acute ruptured appendicitis. It has taken only about six weeks to collect these. They are in chronologic order, and some of you were present at the conference held about two weeks ago when several of these were discussed. A 15-year-old boy; a 16-year-old boy; a 12-year-old girl; a 10-year-old boy; and a 91-year-old man, in that order, on the Surgical Service since the first of July, have had appendicitis with rupture. The usual sequence of events is not pylephlebitis, liver abscesses, and death from general infection, as presumably occurred in this patient here. More commonly, the complications in complicated appendicitis are those of involvement of the peritoneal cavity.

In the first group of these patients, there is diffuse spreading, fulminating and usually fatal reaction to a wide-open stump (a so-called blown stump or massive perforation with minimum walling-off reaction), and in the usual course of events, death within two or three days. Now, this is the kind of thing that is more likely to occur either in infancy, allegedly because of differences of position of the cecum, differences in size of the greater omentum, and so forth, or in the old-age group, as for example in our patient of a few days ago, aged 91, in whom there may be some masking and obtundity that makes it difficult for us to get a clear picture.

In the second group of those with suppurative peritonitis secondary to appendicitis—fortunately the more common group—we have what can be thought of as a progressive series of events in fibrinopurulent peritonitis of the kind that your teachers in pathology have talked to you about over and over again. In these, there is a sort of

balance between the size of the hole in the appendix where the perforation occurs and the walling-off barrier of the fibrin between contiguous groups of bowel, and the various biologic defenses which help to keep it localized. In this kind of peritonitis, which we should think of as progressive fibrinopurulent peritonitis, there tend to be predictable events for which the clinician must be constantly alert. There is localization in the sites of election, the commonest being the cul-de-sac in the pelvis or in the right lumbar gutter. These were seen in these cases we had here this summer. They followed the pattern classically. One of these was drained transrectally, another was drained out through the appendectomy wound from the gutter collection, one had subhepatic drainage, and one had subphrenic. We had all four of the classic sites involved: the cul-de-sac in the pelvis, the right gutter, particularly in the pericecal region, and the subhepatic and the subphrenic. Now, these may all coexist. There may be other unclassifiable collections between loops of bowel or even under the left hemidiaphragm; but this last is uncommon. Now this sequence of events has less lethal potential than the horrible business of pylephlebitis, multiple liver asbscesses, and pyemia.

There are other routes of liver infection, however, that we would have to think of. On the part of Dr. Tammes, Dr. Layton, and others among the pathologists here, I detected a bit of indecisiveness and dissatisfaction with the acceptance of the relatively mild amount of subsiding inflammation in the sections of appendix submitted on this patient. They might have been better satisfied if there had been more meso-appendix shown, whereas Dr. Gius and others here indicated that the normal course of events is for the septic thromboplebitis in the small venules of the mural portion of the appendix to extend into the appendiceal vein in the meso-appendix, up the ileo-cecal vein or veins, and into the right or principal portion of the portal vein. The tributaries converge a short distance from the hilum, and then into the liver. But, as again has been pointed out here, it is not necessary at autopsy for a mass of clot or pus to be visible in the veins, although we sometimes see this picture. It may be that the emboli stirred up at the time of the operation are already present, have found their way into the liver, have lodged, and have left no sequel behind in terms of a thrombotic passageway.

I would venture, however, that this man was already quite sick. The story suggests that he was sicker than could be accounted for by simple appendicitis at the time the operation was performed. So with all due respect to Dr. Layton's theory and my own, it may well be that manipulation, in the presence of suppurative infection, may produce sufficient dislodgement of micro-emboli into the liver to produce this picture. But it probably had indeed already occurred, and this patient probably was already suffering from the effects of this metastasis to the liver.

There are two or three points about this history that disturb me a little. I have the advantage of remembering this patient from years before, at which time we were treating him for the injuries recounted. We have been told in the protocol that he was a chronic alcoholic, but we don't actually have proof of it. That conclusion was based largely on the fact that he came back for a checkup after, it is said, he had removed his cast while on a drunken binge, but if we called everyone a drunkard in Iowa who took a cast off, we might malign many. We have to differentiate between the periodic spree-drinker and the chronic alcoholic. I think this man may well have had only the simpler of these difficulties. In a sense, Dr. Tammes has exonerated the patient by what he has said regarding the appearance of his liver in between the abscesses.

Dr. Ziffren: Dr. Tidrick, I have a question to ask you. Do you think that hospital tissue committees are playing a dangerous role by making the surgeon fearful of removing a normal appendix, and in consequence, that the surgeon permits the patient to go on to perforate and to incur the complications that you mentioned?

Dr. Tidrick: That is a loaded question, but I do. I think that in relation to appendicitis, tissue committees can exercise a local petty tyranny, and that in some instances they have gotten out of hand. I think they can be used as a mechanism of flagellation. The timid or uncertain individual, and the man who is in a precarious situation because of strictures imposed at the previous month's meeting of the Hospital Tissue Committee may be forced at times into courses of timidity, inaction, procrastination, and slothfulness that would not have occurred if he had been left to his own resources. For these reasons, some of the events that we see as a byproduct of tissue committees remind me of some of the malfunctions of committees in general, and so I can say—"I'm agin' 'em."

Dr. Ziffren: Do you have any questions to direct to Dr. Tidrick?

Dr. W. B. Bean, Internal Medicine: There are a couple of points bearing on this general topic which might be mentioned. One is that the liver normally seems to clear the blood of micro-organisms, as one can show by taking simultaneous cultures from the hepatic vein, the arterial blood, and mixed venous blood in bacterial endocarditis, when you have a constant or fairly predictable positive blood culture.

Another point bearing directly on this problem —and, I think, indirectly on Dr. Layton's point— is that when one produces experimental bacteremic infection in the kidneys, and when the kidney is not injured, even though the organisms are circulating through the kidney, no infection occurs. However, if one uses an ordinary needle to irritate the kidney—makes a little hole in it, or

uses electrocautery and then injects the microorganisms—they localize in the region of injury. So the problem has not only theoretical but also practical applications. Although I agree that in all likelihood the man already had liver abscesses at the time of the appendectomy, we should remember the danger of damage to tissues in a patient with a septic process.

Dr. Layton: It was actually my point that the organisms localized in traumatized areas, whereas they would not have localized in uninjured liver tissue. I wonder whether there was so much pressure on retractors or something similar over the surfaces of the liver, during that first operation, that enough tissue damage occurred in these areas for bacterial localization to occur and the infection to begin. The lesions were of a peculiar distribution for hematogenous liver abscesses or for suppurative pylephlebitis. I doubt that the patient had a pylephlebitis. I am more inclined to think that there was liver damage, with the settling out of the bacteria in the damaged areas, rather than the usual pylephlebitis complicating appendicitis, ordinarily with appendiceal abscess.

Dr. Tidrick: Of course we must also bear in mind that this patient could have had liver abscess as a metastatic manifestation of septicemia, but at autopsy, in such an instance, the pathologists should have found not only liver abscesses but also, ordinarily, abscesses in the lungs, brain and kidney, and possibly in the skeletal muscles. They could have come from septic emboli through systemic veins, through the veins of Retzius. These may be spread to the systemic circulation in suppurative phlebitis, just as they may be spread in the portal circulation in pylephlebitis.

Dr. Layton: What is the probability that the parotid gland lesion was an abscess?

Dr. Tammes: There is a very good possibility, but we did not investigate that area.

Dr. Ziffren: Are there any other questions or remarks? Dr. Gius, do you want to make any further comments?

Dr. Gius: To my mind there remains some question as to the pylephlebitic theory of origin, and as to how the clinical and pathologic aspects might be more accurately correlated. I made false assumptions in accepting the patient as a "chronic alcoholic" and in supposing that the absence of a history of abdominal trouble antedating the acute illness indicated that he had had no prior illness. In retrospect, I believe that appendicitis with pylephlebitis—actually an uncommon complication—would rarely be completely silent, as was the case here. Another error concerns my interpretation of the term "subsiding appendicitis." The protocol suggested an element of pathologic "fence-sitting," possibly related to pressures from a tissue committee, and was therefore discounted. Thus, on the basis of false assumptions and errors of interpretation, I came up with the wrong diagnosis. But by way of rationalization, I submit that the process is more important than the answer, or that, according to the psychologist Bruner, "the road is better than the inn."

ANATOMIC DIAGNOSES

Multiple hepatic abscesses, considered secondary to appendicitis
Bacteremia
Status post-operative hepatic abscess drainage
Status post-operative appendectomy (three weeks)
Early peritonitis
Pleural effusion, right, small
Jaundice

STUDENTS' DIAGNOSES

Acute appendicitis, followed by
Suppurative pylephlebitis
Subphrenic abscess
Intrahepatic abscess
Liver failure
Extrarenal azotemia

DR. GIUS' DIAGNOSES

Ruptured peptic ulcer
Subphrenic abscess
Hepatic cirrhosis
Sepsis
Liver failure

Surgeons' Meeting in Denver

The American College of Surgeons will held a regional meeting in Denver, February 17-19, 1964. The headquarters will be at the Denver Hilton.

An innovation at this meeting will be sessions in the specialties of otolaryngology and urology, as well as in general surgery. In all, 12 panels and 22 reports will be heard, covering subjects as varied as treatment of the eyes in severe facial fracture cases, open repair of mitral valve, trauma in obstetrics, what's new in arterial surgery, organ transplants, blood-coagulation defects and treatment of lung cancer.

Of special interest to otolaryngologists will be problems related to vertigo, cancer of the larynx, treatment of sinusitis, and stapes surgery. Subjects of interest to urologists will include procedures for neurogenic bladder, urinary diversion, cancer of the bladder, management of prostatic hypertrophy, and lower urinary-tract obstruction in children.

How-I-Do-It clinics—lecture-demonstrations by authorities—will include topics such as repair of recurrent hiatal hernia, failing circulation, hypnosis in surgery, nasal fractures, benign lesions of the larynx, and tympanosclerosis.

The guest speakers will include J. Englebert Dunphy, M.D., Portland, Oregon, president of the College; Paul C. Samson, M.D., Oakland; Harry M. Spence, M.D., Dallas; Joel W. Baker, M.D., Seattle; C. Rollins Hanlon, M.D., St. Louis; William P. Longmire, Jr., M.D., Los Angeles; Joseph E. Murray, M.D., Boston; and Shirley Harold Baron, M.D., San Francisco.

Coming Meetings

IN STATE

Feb. 18-21	**Refresher Course for the General Practitioner,** S.U.I. College of Medicine, Iowa City.
March 10-11	**Surgery of the Biliary Tract,** S.U.I. College of Medicine, Iowa City.
March 25	**Infertility and Endocrinology,** S.U.I. College of Medicine, Iowa City.

CONTINENTAL U. S.

Feb. 1-2	**Midwinter Radiological Conference,** Biltmore Hotel, Los Angeles.
Feb. 5-7	**American Academy of Occupational Medicine,** Statler Hilton Hotel, Hartford.
Feb. 5-8	**American College of Radiology,** Ramada Inn, Sands Hotel, Tucson Desert Inn, Tucson.
Feb. 7-12	**American Academy of Allergy,** San Francisco.
Feb. 8-11	**Congress on Medical Education,** Palmer House, Chicago.
Feb. 10-11	**Atherosclerosis and Peripheral Vascular Disease,** University of Nebraska College of Medicine, Omaha.
Feb. 10-14	**Medical Society of the State of New York,** The Americana, New York City.
Feb. 10-14	**Chiefs-of-Staff Conference,** University of Colorado Medical Center, Denver.
Feb. 10-14	**Hypertension and Its Complications,** Medical College of Georgia, Augusta.
Feb. 10-14	**Medical-Surgical Clinical Symposia,** University of Kansas School of Medicine, Kansas City, Kansas.
Feb. 12-16	**American College of Cardiology,** Roosevelt Hotel, New Orleans.
Feb. 13-15	**Society of University Surgeons,** Los Angeles.
Feb. 17-19	**American College of Surgeons (sectional meeting),** Denver-Hilton Hotel, Denver.
Feb. 17-19	**Radiology and Radioactive Isotopes,** University of Kansas School of Medicine, Kansas City, Kansas.
Feb. 18-20	**Obstetric Problems in Private Practice,** Medical College of Georgia, Augusta.
Feb. 19-21	**Sioux Valley Medical Association Annual Meeting,** Sheraton Cataract Hotel, Sioux Falls.
Feb. 20-21	**Psychiatric Problems of Children and Their Family,** University of Nebraska College of Medicine, Omaha.
Feb. 24-25	**Vectorcardiography,** University of Kansas School of Medicine, Kansas City, Kansas.
Feb. 24-28	**Recent Advances in Metabolic Diseases,** Mount Sinai Hospital, New York City.
Feb. 27-28	**Heart Association of Southeastern Pennsylvania,** Sheraton Hotel, Philadelphia.
Feb. 27-29	**American Academy of Forensic Sciences,** Drake Hotel, Chicago.
Feb. 27-29	**Central Surgical Association,** Rochester, Minnesota.
Feb. 29-Mar. 5	**International Academy of Proctology,** Deauville Hotel, Miami Beach.
Feb. 29-Mar. 6	**American College of Allergists,** Americana Hotel, Bal Harbour.
March 1-6	**Postgraduate Instructional Course in Allergy,** The Americana Bal Harbour, Miami.
March 2-3	**Seventh Annual Course in Ophthalmology,** Ohio State University College of Medicine, Columbus.
March 2-4	**Symposium on Fundamental Cancer Research,** Houston.
March 2-5	**Neurology for the Internist,** Mayo Clinic, Rochester.
March 2-5	**New Orleans Graduate Medical Assembly,** Roosevelt Hotel, New Orleans.
March 4-7	**Ocular Pathology,** University of Colorado Medical Center, Denver.
March 5-6	**Ophthalmology-Otolaryngology Symposium,** University of Oklahoma Medical Center, Oklahoma City.
March 8-11	**Missouri State Medical Association,** St. Louis.
March 9-10	**Obesity and Endocrine Problems,** University of Nebraska College of Medicine, Omaha.
March 9-11	**Pediatrics,** University of Kansas School of Medicine, Kansas City, Kansas.
March 9-13	**The Physiological Basis of Electrocardiography,** University of Utah College of Medicine, Salt Lake City.
March 15-16	**Dermatology,** Milwaukee County General Hospital, Milwaukee.
March 15-19	**International Anesthesia Research Society,** Flamingo Hotel, Las Vegas.
March 16-19	**American College of Surgeons,** Roosevelt Hotel and Jung Hotel, New Orleans.
March 16-19	**Surgery,** University of Kansas School of Medicine, Kansas City, Kansas.
March 16-20	**National Association of Recreational Therapists,** Lord Baltimore Hotel, Baltimore.
March 16-21	**Medical Technology,** University of Colorado Medical Center, Denver.
March 16-28	**Course in Laryngology and Bronchoesophagology,** University of Illinois College of Medicine, Chicago.
March 18-19	**Minor Surgery,** Marquette University School of Medicine, Milwaukee.
March 18-21	**American Orthopsychiatric Association,** Conrad Hilton Hotel, Chicago.
March 19-21	**American College of Sports Medicine,** Roosevelt Hotel, Hollywood.
March 20	**Obstetrics and Gynecology,** University of Nebraska, Lincoln.
March 20-21	**Kansas City Southwest Clinical Society, Spring Hospital Workshop Program,** Kansas City, Missouri.
March 21	**American College of Physicians (Nebraska regional),** Lincoln.
March 22-25	**California Medical Association,** Biltmore Hotel, Los Angeles.
March 23-25	**Postgraduate Course in Pediatrics,** Grady Memorial Hospital Auditorium, Atlanta.
March 25	**Symposium on Kidney Disease,** Sheraton-Chicago Hotel, Chicago.
March 25-27	**Management of Trauma,** University of Colorado Medical Center, Denver.
Mar. 30-Apr. 1	**Diagnostic Radiology,** University of Michigan Medical Center, Ann Arbor.
Mar. 31-Apr. 3	**American Association of Anatomists,** Denver.

ABROAD

March 8-15	**North American Cinical Dermatologic Society,** Continental Hilton and Acapulco Hilton Hotels, Mexico City.
March 17-20	**Society of Biological Chemistry,** Paris. Info: P. Malangeau, Societe de Chimie Biologique, 4 av de l'Observatoire, Paris 6e.
March 21-24	**International Congress of Cybernetic Medicine,** Naples. Info: 348 via Roma, Naples.
April 5-10	**Asia-Pacific Academy of Ophthalmology,** Melbourne, Australia. Sec-Gen: R. M. Mellar, M.D., Congress Office 82 Collins Street, Melbourne.
April 20-22	**Ciba Foundation Symposium on Disorders of Heart Muscle,** London. Info: 41 Portland Pl., London, W1.



AUTOMOBILE SEAT BELTS

A recent report by Nahum,* of the Department of Surgery, University of California Medical Center, Los Angeles, emphasizes that the usual automobile seat belt is inadequate, for it fails to protect the most vital part of the human anatomy.

According to the author, a study by the Institute of Transportation and Traffic Engineering at U.C.L.A. conducted tests which compared the standard lap-type seat belt, a shoulder loop restraint and a chest restraint. The lap belt was found to be the least effective. Sudden deceleration of the car permitted flexion of the passenger's torso, thus letting his head strike the dashboard or other objects on the interior of the vehicle. If a passenger in an automobile is to be prevented from hitting the front of the compartment, his forward movement must be restricted by a lap belt *and* an upper-torso restraint. Dashboard padding is an insufficient protection, and serves no useful purpose.

The author recites a case history which illustrates the need for an adequate restraining harness and calls for greater attention to passenger safety on the part of automobile designers. A 15-year-old girl was sitting in the right front seat of a 1960 four-door passenger car, and was wearing a properly fastened lap belt. In swerving to avoid striking a pedestrian, the driver hit a tree at a speed of about 30 miles per hour. The girl's face struck the padded dashboard of the car. When she was examined at a nearby emergency hospital, she was found to have a complete transverse fracture of the maxilla, with shattering of the anterior walls of both maxillary antra, a fracture of the left malar bone, fractures of both inferior orbital rims, and multiple, compound comminuted fractures of the nose. Thus, her properly adjusted lap belt failed to prevent her head from striking the dashboard, and the padding on the dash had not prevented her incurring serious injuries.

Unquestionably, the lap seat belt prevents the passenger from being thrown from the car in the event of an accident, but the addition of a double-loop shoulder harness is necessary to prevent his face from striking the dashboard. The shoulder harness is buckled into the seat belt in such a manner that it is automatically released when the seat belt is unfastened.

Physicians should urge the installation of reliable restraining devices in all passenger cars, and the medical profession should demand automobile designs which provide greater protection to passengers.

LACERATION OF THE SPLEEN

A report on experience with 100 cases of laceration of the spleen due to non-penetrating trauma, from the Department of Surgery, Meadowbrook Hospital, East Meadow, Long Island,* is unusual and instructive. The hospital is located in an area of population concentration where there are numerous traffic arteries and automobile accidents are common. The surgical staff have a unique opportunity to treat a large number of traumatic injuries.

In the group of 100 patients with laceration of the spleen due to non-penetrating trauma, an automobile was involved in 68 per cent of the cases, and the injured individual was either the driver, a passenger or a pedestrian. The authors emphasize that although a history of severe trauma was usually elicited, it must be kept in mind that splenic laceration can follow a seemingly insignificant injury. Immediate rupture occurred in 85 patients, and delayed rupture (48 hours after trauma) in 15. Forty-three per cent of the patients were under 20 years of age, the youngest having been three and the eldest 80 years of age. There were three times as many males as females in the group of 100 patients. Associated injuries—head injuries excluded—occurred in one-half of the cases. The commonest of the associated injuries were fractured ribs, laceration of the liver, kidney contusion or laceration, tears of the diaphragm, and tears of the intestine or of the mesentery.

According to the authors, the diagnosis of lacerated or ruptured spleen is of necessity a presumptive one until the abdomen is explored, but it can be detected preoperatively with a good degree of accuracy when the various diagnostic measures have been carefully used. Considerable reliance has been placed recently upon four-quadrant abdominal paracentesis as a means of confirming a suspicion of intraabdominal bleeding. This procedure has been particularly helpful in those patients with associated cranial injuries who are admitted in coma and with evidence of shock. Of 42 patients in whom this diagnostic measure was employed, the findings were positive in 36 (85 per cent). In seven patients in whom the taps were negative and who were operated upon, the amount of blood found in the abdomen was small. There were no complications which resulted from the paracentesis. It is emphasized that a negative tap does not rule out intraabdominal hemorrhage, but in the experience of the Long Island group, it often

* Nahum, A.: Prevention of facial trauma in automobile accidents. CALIF. MED., **99**:386-387, (Dec.) 1963.

* Stivelman, R. L., Glaubitz, J. P., and Crampton, R. S.: Laceration of spleen due to nonpenetrating trauma; one hundred cases. AM. J. SURG., **106**:888-891, (Dec.) 1963.

Editorials continued...

proved to be the single most reliable procedure available for establishing an early diagnosis of intraabdominal hemorrhage.

Admission hemograms were done on 77 patients. A continuing fall in successive hematocrit determinations is of extreme importance in patients in whom laceration of the spleen is suspected. The leukocyte count averaged 16,000/cu. mm., and there was a consistent increase in the polymorphonuclear leukocytes. According to the authors, roentgenograms of the chest and abdomen were of little help in diagnosis, but evidence of fractured ribs or laceration of the diaphragm were not uncommon in such cases.

As a result of their experience, the authors assert that an accurate diagnosis of laceration of the spleen depends primarily upon the taking of an adequate history, a thorough physical examination, a high index of suspicion, and frequent examinations of the abdomen. When a persistently tender and rigid abdomen, particularly in the left upper quadrant, is associated with shock, pain in one or both shoulders, and a history of blunt thoraco-abdominal trauma, the indication for operation will be clear in the majority of patients.

Prompt surgical intervention, replacement of blood loss and control of the splenic vessels are mandatory in patients with laceration of the spleen. An upper-midline or left-paramedian incision is recommended, and when the abdomen has been opened and free blood is found, a hand is inserted into the left upper quadrant, and the diagnosis is confirmed by palpation. The spleen should be promptly delivered into the wound, and the bleeding controlled by manual compression. The splenic vessels can then be ligated separately under direct visualization, a procedure which avoids trauma to the tail of the pancreas. The abdomen must be explored for associated injuries.

There were 22 deaths in the series of 100 patients. Thirteen of the group succumbed before an operation could be performed. Eighty-seven patients underwent exploratory laparotomy, and there were nine deaths in this sub-group, or an operative mortality of 10.3 per cent. In all of the patients who died there was an associated major injury in addition to the ruptured spleen. No patient died of a ruptured spleen, alone. There was one death in the 15 patients with delayed rupture of the spleen.

It was pointed out that the diagnosis of laceration of the spleen can be difficult, and that a complete symptom complex is often lacking. Four-quadrant paracentesis has proved extremely valuable in confirming the diagnosis. Prompt surgical treatment and blood replacement are mandatory. The operative mortality is primarily related to the presence of major associated injuries.

NEONATAL RESPIRATORY DISTRESS

A preliminary report on a new approach to the treatment of neonatal idiopathic respiratory distress syndrome or hyaline membrane disease has been issued by Diamond and DeYoung,* of the Stritch School of Medicine, Loyola University, Chicago. The treatment of this condition has been discouraging, and any contribution that improves the outlook for patients with this puzzling syndrome is most welcome.

The authors point out that certain clinical features of neonatal idiopathic respiratory distress syndrome have made it possible to equate it with hyaline membrane disease. The quantitation of thoracic retractions and the degree of reticulogranularity on pulmonary roentgenograms in neonatal distress syndrome have shown a significant correlation with hyaline membrane disease demonstrated at autopsy.

It is emphasized that this is a preliminary report, and that success in treating this condition must be evaluated cautiously. In those infants who survive, there is always a question about the accuracy of the diagnosis, and it is possible that untreated patients might survive. The mortality rate for the disease has not been determined.

The authors were prompted to use chlorpromazine in treating the respiratory distress syndrome by a report by Stokes, who wrote in 1955 of the survival of a premature infant who had presented a clinical picture resembling the respiratory distress syndrome. Chlorpromazine, it was thought, was lifesaving in that it lowered the body temperature, thus reducing the infant's need for oxygen until the hyaline membrane had cleared.

The clinical material in the Chicago study consisted of 25 newly born infants who presented the combination of clinical signs which characterize the neonatal idiopathic respiratory syndrome. Cases in which autopsy showed bronchopnuemonia were not included. During the first two years of the study, alternate cases were treated, but during the third year, all patients with the diagnosis were given the benefit of treatment. The decision to treat all cases was based on an increasing confidence in the efficacy of the therapy.

All patients were given the conventional treatment of oxygen, water mist with a wetting agent, and antibiotics. Five infants were digitalized. In addition to the conventional therapy, 12 infants were given chlorpromazine by nasogastric tube. The dose in each case was 2.0 mg. in the form of 1.0 ml. of syrup of Thorazine every hour. This drug was continued until retractions of the thorax were no longer present. In most instances when retractions disappeared, the respiratory rate had decreased

* Diamond, E. F., and DeYoung, V. R.: Treatment of neonatal idiopathic respiratory distress syndrome with chlorpromazine. ILLINOIS M. J., **124**:538-541, (Dec.) 1963.

from 80 to 168 per minute during the critical stage, to 50 or 60 per minute.

The results of therapy were impressive. Of 10 patients treated with supportive measures only, there were just two survivors, for a mortality of 80 per cent. Of the 15 patients treated with supportive measures *plus* chlorpromazine, there were 13 survivors, for a mortality of 13.3 per cent. Autopsies were done on all infants who died, and pulmonary hyaline membrane was found.

The authors were impressed with the marked reduction in the respiratory rate and the accompanying disappearance of thoracic reaction following the administration of chlorpromazine. The infants became flaccid, and there was a loss of the Moro and suck reflexes in most of the treated infants. It was their impression that the reduction of tachypnea and of thoracic retraction prevented physical exhaustion, thus tiding the infant over the critical period until the hyaline membrane had been resorbed. They were in agreement with Cook, who postulated that the physical exhaustion due to the work of respiration may be the determining factor in the deaths of infants with this disease.

Though acknowledging that their series of patients treated with chlorpromazine was small, the Loyola group thought the infants so treated had an improved prognosis, and they concluded from their experience that a further trial of this form of therapy is justified.

SURGERY FOR PATIENTS ON ANTICOAGULANTS

There has been considerable reluctance about attempting even very minor surgical procedures upon patients who are on anticoagulant therapy for thromboembolic disease, but a recent report from the Veterans Administration Hospital, Denver,* tells of dental extractions performed on a group of patients who were receiving anticoagulants and in whom no complications occurred and bleeding was of no consequence.

Anticoagulant therapy is widely used in a variety of thromboembolic diseases, and it is usually continued over long periods of time. A need for dental extractions is not uncommon in this group of patients, but there has been considerable doubt about the safety of oral surgery under conditions of drug-induced prolongation of the clotting mechanism. In most of the patients, an interruption of therapy is undesirable because of the hazards involved.

The Denver group have reported 25 single or multiple dental extractions in 11 such patients, without interruption of anticoagulant therapy. All were receiving coumarin-like drugs, and the extractions were done when the plasma prothrombin time was in an acceptable range. All but three patients underwent dental surgery as outpatients, but brief hospitalization is wise, the authors think, in selected patients.

The Denver group emphasizes that tissues must be handled gently to avoid unnecessary trauma and the tearing of blood vessels. When necessary, a surgical flap was raised, but it was not found necessary to trim gingival tissue next to the socket. Bone was removed or trimmed as needed to facilitate removal of the tooth. The flap of gingival tissue was replaced by means of multiple interrupted silk sutures under tension. Foam gelatin was not used in the socket. A bite sponge was immediately placed over the socket, and the patient was instructed to maintain heavy biting pressure upon it for 30 minutes. Ice packs were used intermittently, mouth washes were omitted for 48 hours, and a soft diet was recommended for several days.

There were no complications, and no bleeding occurred in 51 extractions in 11 patients. The maximum number of teeth extracted from a single individual at one sitting was seven.

The authors concluded that the advantages of continuing anticoagulant therapy during a period of dental extractions outweigh the risk of hemorrhagic complications.

* Frank, B. W., Dickhaus, D. W., and Claus, E. C.: Dental extractions in presence of continual anticoagulant therapy. ANN. INT. MED., 59:911-913, (Dec.) 1963.

A PREVENTIVE FOR GRAM-NEGATIVE BACILLARY INFECTIONS

In a résumé of the Third National Conference on Institutionally Acquired Infections,* Dr. Harold J. Simon points out that gram-negative bacillary infections are very much on the increase as regards both incidence and severity. Particularly at risk in hospitals are elderly, debilitated patients, those who have malignant disease and are undergoing treatment with immunosuppressive drugs, and those requiring catheterization of the urinary bladder.

Dr. Simon states that between 6 and 30 per cent of all hospitalized female patients have bacteriuria, and that in 45 per cent of these, the bacteriuria can be traced back to a previous instrumentation. It is asserted that whereas a single attempt at catheterization carries a 2 per cent risk of infection, an indwelling Foley catheter carries a 98 per cent risk of infection. The routes of infection are many: (1) from the anterior urethra to the bladder via the catheter; (2) an ascending infection from contaminated collecting bottles, especially if there are air bubbles to serve as carriers; (3) from the use of contaminated equipment; and (4) ascending infection around the catheter along the mucosa.

Of particular interest, as Dr. Simon points out, is

* Simon, H. J.: Institutionally acquired infections. CALIF. MED., 99:369-371, (Dec.) 1963.

Editorials continued...

the fact that irrigation of a three-way closed catheter system with either polymixin-neomycin or chlorhexidine solution has reduced the risk of infection almost to zero. The use of other antibiotics has failed to reduce the incidence of infection. Thus, the use of a closed system and a three-lumen catheter can definitely reduce the hazard of urinary-tract sepsis.

Prophylactic antimicrobial therapy has been proved ineffectual. Infection is not prevented, and antimicrobial resistance results. A closed system of drainage and irrigation can reduce the incidence of infection from an indwelling catheter from 100 per cent to approximately 10 per cent.

Revised Rules for the IMS Grievance Committee

The following Revised Rules of the IMS Grievance Committee become effective upon their publication in this issue of the JOURNAL:

I. PURPOSES. In amplification of and furtherance of its purposes as stated in the By-Laws of Iowa Medical Society, the Committee shall:

A. Investigate as does a grand jury the professional conduct and ethical deportment of members of Iowa Medical Society upon its own initiative or upon the complaint of any person;
B. Supervise the ethical deportment and professional conduct of members of Iowa Medical Society;
C. Recommend to the Society, Judicial Council, or Board of Censors of any component society any action it deems appropriate respecting the ethical deportment and professional conduct of a member or members of Iowa Medical Society;
D. Prefer charges with, and prosecute before, the Judicial Council or the Board of Censors of a component society, as it deems appropriate, in the case of any member deemed by it to be guilty of unethical deportment and unprofessional conduct;
E. Recommend to the Judicial Council or to the Board of Censors of a component society that any violation of Title VIII, Code of Iowa, by any person, whether a member or not, be called to the attention of the State Board of Medical Examiners, the State Board of Health, the Attorney General, or the appropriate County Attorney.
F. Act as an arbitrator of any grievance which may be asserted by any person whether he be a physician or not against a member.

The Committee shall in no event assume to discipline a member by suspending or revoking his membership in the Society or by instituting proceedings with any public officials to suspend or revoke his license to practice. The Committee may, however, arbitrate grievances, affect settlements and impose conditions of probation as hereinafter provided and may in all cases give its advice to members concerning questions within its jurisdiction.

II. STANDARDS OF ETHICAL DEPORTMENT AND PROFESSIONAL CONDUCT. The Committee shall, in fulfilling its purposes, and in accordance with Chapter VII of the By-Laws of Iowa Medical Society, be controlled by and limited to the principles of medical ethics of the American Medical Association, Title VIII, Code of Iowa, and such other rules of conduct as may be established by the Judicial Council.

III. ORGANIZATION. At the first meeting after each annual meeting of the Society, the Committee shall elect from its members a Chairman, Vice Chairman and Secretary. The Chairman shall preside at all meetings, and the Vice Chairman shall preside in his absence. The Secretary shall preserve a record of the proceedings as hereinafter stated. In case the Chairman or Secretary of the Committee is absent for any reason the Vice Chairman shall serve instead of such officer, or any member may so serve pro tem.

IV. INITIATION OF ACTION

A. Action by the Committee may be initiated on the written complaint of any person filed with the Committee (which shall be acknowledged by the Secretary), or upon the initiative of the Committee.
B. If the complaint filed with the Committee shows on its face that it does not involve a question within the scope of the Committee's purpose, then it shall be returned to the complainant without further action or record, but the Committee shall notify the complainant in writing of its lack of jurisdiction.
C. If the complaint does show on its face that it does involve a question within the scope of the Committee's purpose, then the complaint shall be investigated, heard, or otherwise disposed of as required by these rules.

V. DISPOSAL OF COMPLAINTS

A. The Secretary shall notify the Chairman of the receipt of each new complaint, and the Chairman shall then determine whether the complaint should be first investigated or heard by the whole of the Committee.
B. If the Chairman determines that the complaint should first be investigated, then he shall designate one or more members of the Committee to make an investigation. The investigation may include interviews with the complainant, the subject of the investigation, and any third parties having knowledge of the facts involved, and the examination of such records as may be made available, and a review of the files of the Committee.

C. Upon completion of the investigation, a report thereof shall be made to the Committee, and if the Committee shall then determine that no disciplinary action is indicated, it shall either close the case without further action or record, or attempt to effect an amicable adjustment of the complaint, as circumstances may warrant. If amicable settlement of a complaint cannot be effected and if the complainant shall agree in writing to accept the advice of the Committee for reconciliation of the complaint, then the Committee shall reduce its advice to writing, a copy of which shall be supplied to both the complainant and the physician concerned. Failure of a member of the Society to accept and follow such advice constitutes grounds for disciplinary action.

D. If the investigation or the complaint itself indicates disciplinary action, then the Committee shall consider the matter at any meeting at which a quorum is present. The Committee may then determine that disciplinary action is not indicated, and dispose of the complaint as provided in Paragraph C above. But if the Committee shall then determine that disciplinary action is indicated, it shall:

1. File formal, written charges with the Judicial Council or the Board of Censors of a component society, as it deems appropriate, and, if statutory violations are involved, it may in addition thereto or in the alternative, recommend to the Judicial Council or the Board of Censors of a component society that the matter be brought to the attention of the appropriate public officials; or
2. If extenuating circumstances are present and if the member shall agree thereto, the Committee may hold the charge in abeyance pending the good behavior of the member and the observance of any other and additional terms as the Committee may impose. In all such cases, the Committee shall make a permanent record of its action which shall be available to it and its successors in considering any additional complaint against the member, and, if the terms imposed be violated, the charge shall be immediately filed with the appropriate judicial body.

VI. GENERAL.

A. *Quorum:* Five members of the Committee shall constitute a quorum for the transaction of any business required of the Committee as a whole, and any action taken by a majority of such quorum shall be and constitute the action of the Committee.

B. *Form of Charges and Prosecution Thereof:* Charges filed with any judicial body of the Society shall be in writing and shall cite such principles of medical ethics, statutes, or other rules of conduct believed to have been violated. Such charges shall bear the written signature of two officers of the Committee, and shall include the typed names of all other members of the Committee who have taken part in the proceedings. The Committee shall designate one or more of its members to conduct the case before the judicial body.

C. *Report of Actions:* The Committee shall in all cases promptly notify the persons concerned of its actions. Notification shall be considered given when deposited in the United States mails, with proper postage affixed, addressed to the last known mailing address of the person entitled to such notification.

D. *Proceedings Confidential:* The Committee shall, in all of its proceedings, preserve, insofar as is possible, the confidences and anonymity of those persons appearing before it or otherwise involved in its proceedings. A complainant and others will be informed, however, that any disciplinary action will necessarily require a revelation of the facts of the case and the identity of the persons involved.

E. *Records:* The Committee shall keep a record of its proceedings, but such records shall be maintained in a manner insuring that no access thereto may be had by other than members of the Committee, the Judicial Council and their necessary professional and technical assistants.

F. *Reports to the Society:* The Committee shall make periodic written reports to the Society concerning its work and recommendations, but such reports shall not be sufficiently detailed to identify any parties involved. The Committee shall also make such reports of its work to the Board of Trustees as the Board may request and an annual report to the House of Delegates, which reports may contain such recommendations concerning the scope of the Committee's work as it deems appropriate.

G. *Members to Cooperate:* All members of Iowa Medical Society shall cooperate with the Committee in performing its work and, to that end, any member refusing to so cooperate, whether he be accused of unethical deportment and unprofessional conduct or not, shall be cited to the Judicial Council for such action as that body shall deem appropriate.

H. *Expenses:* The Committee shall have access to the usual routine services of the executive office of the Society and in the event that extraordinary expenses appear to be necessary, it shall receive prior authorization of the Board of Trustees for such expenditures.

I. *Time and Place of Meetings:* Upon giving reasonable notice to all members of the Committee, the Chairman shall call such meetings of the Committee as are necessary for the transaction of its business, such meetings to be held at the executive office of the Society or at such other place as he shall designate.

J. *Non-Members:* The Committee shall investigate complaints concerning physicians who are not members of the Society and, insofar as is practical, these rules shall apply to all cases involving such non-members. In any such cases where disciplinary action would be indicated before a judicial body of the Society were the physician a member, then the physician shall be so notified in writing, and the copy of such notification shall be filed with the executive office of the Society and the Secretary of the State Board of Medical Examiners.

K. *Rules Published:* A copy of these rules shall be furnished to any complainant, his representative, or any physician upon request.

President's Page



All presidents of county medical societies and all chairmen of county MAA claims review committees are asked to meet at 10:00 a.m. on Sunday, February 16, at the Savery Hotel in Des Moines, to establish the procedures that will be used in processing the MAA claims which will be referred to the IMS by the medical consultant of the State Board of Social Welfare. The "usual and customary fee" concept is to be followed by all physicians in submitting MAA claims, and the county ranges of fees will be used by the county review committees in judging the billings requiring additional professional consultation.

It is absolutely essential that two representatives from each county society be present for that meeting. If extenuating circumstances prevent either the county president or the county review committee chairman from attending, an appropriate alternate should be sent to take his place.

The program participants will include IMS officers, the chairman of the IMS review committee, and state government personnel who are concerned with the operation of the MAA program.

C. W. Edwards Sr.

President

THE JOURNAL *Book Shelf*



BOOK REVIEWS

PRINCIPLES OF NEUROLOGICAL SURGERY, by *Loyal Davis*, M.D., and *Richard A. Davis*, M.D. (Philadelphia, W. B. Saunders Company, 1963. $15.00).

It is a privilege for me to review this splendid text because of my long friendship with the senior author and also because I reviewed his original book on neurological surgery for the JOURNAL in 1936.

The volume, written by Loyal Davis and his son, Richard, is a valuable guide for students, general practitioners, internists, neurologists, and neurosurgeons.

The text incorporates a novelty. At the beginning of each chapter there is a photograph of one of the founders of neurology, neuropathology or neurosurgery, and a brief aphorism taken from his writings. The volume is extremely up to date, emphasizing careful history, examination, and detailed neurologic examinations, with full evaluation of the newer methods of laboratory and radiographic adjuncts to our armamentarium. In particular, there are discussions of the wider use of fractional pneumoencephalography, angiography—carotid, vertebral, basilar, or a combination of methods—the use of the scintillometer, particularly in scanning with radioactive mercuric hydroxide, and the use of the Geiger-Mullen surgical probe in attempting to obtain as complete a removal of a deep-seated glioma as possible. The Davises' description of histopathology is well done and historically accurate.

The text contains an excellent evaluation of improved methods of neurosurgical technics, of the hologenated hydrocarbons in anesthesia, and of hypothermia and hypotension, plus the evaluation of the total blood volume. The discussion of the methods of reducing brain volume, particularly with urea derivatives, is timely and adequate. The authors' concept of glandular replacement, in cases where tumor removal has produced such a deficit, is up to date, and the evaluation of surgery in intracranial vascular diseases and diseases of the carotid artery of the neck should be of interest to the discerning internist and general practitioner, as well as to the neurologist and neurosurgeon.

The section on the herniation of the nucleus pulposus is adequate, except for the omission of a discussion on discography and the anterior approach for disc pathology in the cervical area. Management of inflammatory lesions of the brain and spinal cord are discussed because these conditions often mimic surgical lesions.

The chapter on the irradiation of tumors of the nervous system is comprehensive and bespeaks a careful review of extensive experience.

The treatment of head injuries is excellent, again stressing judicious administration of urea, utilization of hypothermia and vigilance in the detection of these entities. The chapter on injuries to the spinal cord is good, except that it overlooks the use of an alternating-pressure mattress in the prevention of decubital ulcers. The discussion on rehabilitation is commendable and informative.

The chapter on peripheral nerve injuries is succinct, and evinces the senior author's long interest in this field. The chapters on neurosurgical management of intractable pain, surgery of the autonomic nerve system, epilepsy, congenital anomalies of the neural axis, and the extra-pyramidal motor system are historically accurate, and written with admirable judgment and restraint.

This text, although very fundamental, will be valuable not only to the neophyte in neurosurgery, but also to the more experienced practitioners as a reference work.—*Walter D. Abbott*, M.D.

RESULTS OF SURGERY FOR PEPTIC ULCER: A COOPERATIVE STUDY BY TWELVE VETERANS ADMINISTRATION HOSPITALS, ed. by *R. W. Postlethwait*, M.D., and *James C. Thoroughman*, M.D. (Philadelphia, W. B. Saunders Company, 1963. $8.00).

The fact that this book contains 308 pages, 166 tables and 63 figures places it in the same general category as the first volume of ENCYCLOPAEDIA BRITANNICA, the volume encompassing "A to ANTARAH." It is not a book which one reads, but rather is a work to which one may refer. Actually, it is a statistical study in depth of a large number of cases of peptic ulceration treated in 12 Veterans Administration Hospitals. As in all statistical studies, the reader is inclined to be interested in and to agree with those data which support his personal experience or belief, and to dismiss the other data as unimportant.

To quote from the preface: "The authors generally agree that no dramatic answers to the problems of the surgical treatment of peptic ulcer resulted from this study. Perhaps, however, the questions have been defined a bit more clearly and possibly even a few new ones proposed." Areas of the study which chiefly interested me were:

1. The extent of the gastrectomy carried out had remarkably little influence on the incidence of the "dumping syndrome."

2. Gastroduodenostomy was associated with a greater recurrence rate of peptic ulceration than was gastrojejunostomy.

3. The percentage of stomach resected *tended* to be related to the incidence of weight loss. However, in each group the numbers of patients losing weight *tended* to be offset by an almost equal number who gained weight.

4. Vagotomy apparently had no modifying effect on

weight gain or loss when combined with gastric resection, varying from 30 to 90 per cent of the stomach. However, combined with pyloroplasty, weight loss was more frequent.

5. During the course of this study, there seemed to be a tendency toward the use of vagotomy with modest gastric resection, or vagotomy and pyloroplasty. This latter is of some interest, inasmuch as the recurrence rate of peptic ulceration in simple gastroenterostomy and vagotomy was quite substantial.

This is a book which will gather dust, but which will also serve as a monument and a milestone when the past and future of the surgical approach to peptic ulceration are considered.—*Tom D. Throckmorton*, M.D.

BOOKS RECEIVED

ATOMIC ENERGY ENCYCLOPEDIA IN THE LIFE SCIENCES, ed. by *Charles Wesley Shilling*, M.D. (Philadelphia, W. B. Saunders Company, 1964. $10.50).

ELECTROCARDIOGRAPHIC NOTEBOOK, Second Edition, by *M. Irene Ferrer*, M.D. (New York, Harper & Row, 1964. $2.75).

BLOOD DISEASES, by *M. A. Atamer*, M.D. (New York, Grune & Stratton, Inc., 1963. $16.50).

Postgraduate Short Courses at S.U.I.

SURGERY OF THE BILIARY TRACT
March 10 and 11, 1964

The registration fee of $15 for this course includes a luncheon ticket. Advance registration is requested, and requests for hotel or motel reservations can be submitted at the same time. The Iowa Chapter of the Academy of General Practice has approved the program for eight hours of credit.

Tuesday Evening, March 10

6:00 p.m. SOCIAL HOUR AND DINNER, UNIVERSITY ATHLETIC CLUB. "Gallstone Disease Updated" —Fraser N. Gurd, M.D., professor and chairman, Department of Surgery, McGill University, Montreal

Wednesday, March 11

7:30 a.m. LIVE TELEVISION PROGRAM: Biliary-tract operations by members of the Department of Surgery staff. J. L. Ehrenhaft, M.D., moderator

9:30 a.m. "Advances in Diagnostic Methods in Biliary-Tract Disease; Newer Agents in Oral Cholectography; Use of Rapid Oral Agents; Percutaneous Cholangiography; Cinefluorography in Common Bile-Duct Problems"—H. W. Fischer, M.D., and staff

10:30 a.m. "What Are the Results of Cholecystostomy in Gall-Bladder Disease in the Aged?"—S. E. Ziffren, M.D., and V. G. Crosby, M.D.

10:50 a.m. "Cholesterol Metabolism and the Possibilities in Relation to Gallstones"—W. E. Connor, M.D.

11:20 a.m. "Mortality and Morbidity in Biliary-Tract Operations. Lethal Complications. Analysis of S.U.I. Patients"—J. A. Gius, M.D., and A. Hreno, M.D.

11:40 a.m. "Anomalies of the Biliary Tract"—B. J. Anson, M.D.

12:10 p.m. "Carcinoma of the Gall Bladder and Bile Ducts. Relationship to Preexisting Biliary-Tract Disease. Experience at S.U.I."—R. D. Liechty, M.D., and L. DenBesten, M.D.

12:30 p.m. LUNCHEON, Hillcrest Dining Room

2:00 p.m. "Hepato-Renal Syndrome"—E. E. Mason, M.D.

2:15 p.m. "Safety Factors in Surgery of the Biliary Tree and Liver"—Dr. Gurd

3:15 p.m. PANEL DISCUSSION: Unsolved and Controversial Problems in Biliary-Tract Surgery —J. A. Buckwalter, M.D., moderator, and all previous participants in the program. (Each issue presented for discussion will be introduced by a short strip motion picture, narrated by the staff member defending the thesis presented.)

INFERTILITY AND ENDOCRINOLOGY
Wednesday, March 25

The registration fee of $10 for this conference includes a luncheon ticket. The program has been approved by the AAGP for seven hours of credit.

9:15 a.m. "The Significance of Endometrial Changes in Infertility"—Robert W. Noyes, M.D., professor and chairman, Department of Obstetrics and Gynecology, Vanderbilt University, Nashville

10:00 a.m. "Available Endocrine Tests and Their Significance"—James T. Bradbury, M.D.

10:45 a.m. "The Significance of Thyroid Disorders in the Female"—Robert E. Hodges, M.D.

11:15 a.m. "What Constitutes an Adequate Infertility Workup"—James P. Jacobs, M.D.

11:45 a.m. QUESTION AND ANSWER PERIOD

12:30 p.m. LUNCHEON

1:30 p.m. "Endocrinologic Aspects of Infertility"—Robert W. Noyes, M.D.

2:15 p.m. "Psychological Aspects of Infertility"—Albert S. Norris, M.D.

3:00 p.m. "Male Aspects of Infertility—Medical and Surgical"—Raymond G. Bunge, M.D.

3:45 p.m. DISCUSSION OF INTERESTING CASES (with audience participation)

Iowa Association of Medical Assistants

Budgeting Your Time

"Waste not, want not" is an adage that applies to more commodities than just money or food. Time isn't often included in this category, but time can be bought, can be saved and can be stored like anything else. Time is made available to us, but it remains for us to learn how to get the most out of it for our own uses. How often have you exclaimed, "My days just aren't long enough. Other people seem to accomplish so much more than I do in the same amount of time. How do they do it?" The answer is that they conserve time by investing it, rather than squandering it.

Time can be divided into two parts—hours and energy—and into two values—clock and use. Industry has learned that an efficient use of time increases profits. Efficiency experts, professional consultants, work expediters—whatever you choose to call such people doesn't change their primary function. They teach us how to plan our work, to conserve our energies, and to increase the number of tasks we can accomplish in a given period.

Remember our suggestion about a method for supplying various areas in the physician's office with identical items? Use a tray to carry the sponges from the supply cupboard to the various rooms where they are needed. Carrying sponges from the cupboard to one room, returning to the cupboard for more sponges for another room, and going back to the cupboard for still more for a third room—this is a procedure that wastes as much time and energy as we have used in describing it. The use of a tray was proposed in 18 words. I used 31 words and two commas, in the second sentence, just to get back to the third room! The time SAVED on the first trip BOUGHT time for straightening one shelf in the cupboard. With every step and every minute you waste, you are shortchanging yourself!

There are four forms of energy. The first is *physical*—walking, standing and exercising. If we expend too much physical energy, we reduce our efficiency and waste time. The second is *mental* energy. We use this form in thinking, reading, planning, talking and worrying. When we are mentally tired, we work inefficiently, like the carpenter with a dull saw. The third is *nervous* energy. This is the momentum for our physical and mental energy. The fourth is energy of the *spirit*. It gives us pep, confidence and the ability to enjoy life and our work. Understanding these forms of energy and learning how to conserve them is the first step toward an intelligent use of time.

The greatest enemy of time is *procrastination*. Making plans for work and then putting it off until tomorrow is a waste of time and energy, and carrying the load of these unstarted tasks wears us out. The work might have been done in a few hours, or in a few minutes, if only we had begun. Really, this is a matter of indecision. We think up excuses for putting off the job until there is more time, or because we think that at another time it would be easier. All that we need is a moment to decide what is involved and then to get started.

The second excuse for postponement—"sometime . . ."—is another form of procrastination. Action is the most effective antidote for the "sometime . . ." disease; unless treatment is started immediately, however, it can progress to a fatal "never."

Time's third enemy is the making of excuses for inaction. Most of us waste time thinking up excuses. Substituting action for explanation is a much more effective use of time.

And then there's *regret*. This is a senseless waste of time and mental energy. Maybe we should adopt the philosophy that "yesterday ended last night." Disappointments, blunders and wasted time are not changed by dwelling on them. Wipe the slate clean at night, and start fresh with a new day! You can't live life in retrospect. You can learn from experience, but you can't correct it.

Frustration burns up energy much faster than work consumes it. We know that life will be full of frustrations, large and small, and accepting the fact that we are sure to have them is the first step in saving time. When we meet with frustration, let's turn immediately to another project in which progress is possible. Pressure on the mind and spirit is immediately relieved, and we use time to full advantage. We regain confidence with accomplishment, and often we can then go back to the first task with fresh ideas, and accomplish our goal.

How do we buy time? Every occasion on which you pick up the telephone for a long-distance call, you are buying time. Think of the time you might otherwise use in writing or dictating a letter, and then in waiting for a reply. A telephone call is

two-way communication on one-way time. Or think of the time one might spend in looking for parking spaces and running from store to store looking for a single item. Two or three telephone calls to the stores to check stock and prices would save you time, money, gasoline and shoe leather.

We buy time by having our office equipment kept in good condition so that we can work efficiently. Do-it-yourself jobs are fine if one finds them pleasant, hasn't something more important to do, and can perform them quickly and well. But if we dislike them or can do them unsatisfactorily, it is usually better for us to hire someone who has been trained for the work. The time saved can be devoted to tasks at which we are expert and in which we find relaxation or pleasure.

Do you like to read, but haven't time for a lengthy novel or a book-length piece of non-fiction? Buy some time by reading condensations. The time you save by reading one condensation will buy the time in which to read one or two more. The use of packaged foods is one of the greatest bargains of our times. Experts have made it possible for us to prepare gourmet foods with no more than a few minutes of our time and energy. "Starting from scratch" on the same dishes might have taken us hours. But these convenience foods are no bargain unless we do something worthwhile with the hours or minutes that they save us.

Buying a "how to do it" book constitutes buying some experience. It helps us avoid wasting time and materials in experimentation. We start where the last man left off, through buying weeks or months of his time.

We start storing time in early childhood. Education is the process of storing time. We store facts and methods for future use; we learn where to look for quick answers or for special knowledge; we learn how to think and how to concentrate. Later in life, writing down a fact is an effective way of storing time, for the written record leaves our minds free for other matters. The card-index system for filing information mentioned in our December article is one method for storing time against future need. A want list, or shopping list, is another investment in time for future use. With such a reminder, no time need be lost in searching up and down aisles in the stores, looking for things you might need. Maintaining a reserve stock of supplies saves time. The use of a Telephone Credit Card buys time, saves time and stores time for future use. Thermal or photographic duplicating equipment buys time by sparing us endless hours of typing.

Doing two things at once is a great time-saver. We do some things automatically and without using our minds—e.g., washing dishes, dressing, making beds and emptying wastebaskets and ashtrays. Let's find second tasks with which we can occupy our minds as we do these strictly manual chores. Let's use this time in thinking out projects, making plans, listening to the news, etc. Travel time can be made to serve two purposes, as well. In this jet age it is possible for us to cross the continent in less than half a day, and to speed along so comfortably that we can use our "air time," as well as the hours or days we have saved by flying, for work at almost any task that requires our attention.

Learn to budget your time. Store it by purchasing labor-saving devices. Save it by planning. Invest it by using it efficiently.

—HELEN G. HUGHES

Ten Human-Relations Commandments

1. Speak to people. There is nothing as nice as a cheerful word of greeting.

2. Smile at people. It takes 72 muscles to frown, and only 14 to smile.

3. Call people by name. The sweetest music to anyone's ears is the sound of his name.

4. Be friendly and helpful. If you would have friends, be friendly!

5. Be genuinely interested in people. You can like everyone if you try.

6. Be cordial. Speak and act as if everything you do were a genuine pleasure.

7. Be generous with your praise, cautious with your criticism.

8. Be considerate with the feelings of others. It will be appreciated.

9. Be thoughtful of the opinions of others. There are three sides to every controversy—yours, the other fellow's, and the right one.

10. Be alert to give service. What counts in life is what we do for others.

THE DOCTOR'S BUSINESS



How Much Fidelity Bond?

HOWARD D. BAKER

Waterloo

Even with the most trusted employees, and under an ideal system of internal control, employee dishonesty can and does occur. With a system any less than ideal, in fact, an employer may be encouraging dishonesty. It is also a time-worn fact that embezzlements occur in places and at times where they are least expected. The Fidelity and Deposit Insurance Company estimates losses from employee dishonesty at $500,000,000 annually. Thefts range from insignificant amounts up to thousands of dollars, and occasionally the sum is large enough to bring complete financial ruin to an employer or firm.

Besides providing decent working conditions, reasonable hours, adequate wages and opportunities for advancement, employers have a moral obligation to safeguard their employees' integrity by shielding them from temptation to embezzle or steal. No system of accounting or of internal control has yet been devised which will absolutely prevent dishonesty, yet much can be done to keep an inherently honest employee from yielding to temptation in a moment of weakness or during a period of financial worry.

If you can answer "Yes" to all of the following questions, you have an adequate internal control system, but if at least some of the procedures referred to are not operative in your office, you should discuss them with your management consultant or accountant:

1. Is the mail opened by one of your trusted employees *other than* your bookkeeper or cashier?

2. Is a list of mail receipts, classified as to checks, cash or money orders, prepared by that person and checked against the daybook regularly?

3. Are receipts issued for all moneys received, and are all unused receipts accounted for as they are used or spoiled? Receipts should be serially numbered.

4. Is cash reconciled or balanced daily, and is it subject to check by someone other than the person responsible for the reconciliations?

5. Are deposits made daily of each day's cash receipts, intact, and is responsibility fixed on one person for making those deposits?

6. Are all overages and shortages reported promptly?

7. Cash withdrawals of any type are potentially dangerous and should not be made. If such withdrawals are made, is a voucher regularly completed, showing the amount and date, and signed by the person who has received the funds?

8. Is cash physically safeguarded to prevent a dishonest employee from blaming "outside theft" in case of a shortage?

9. Are the daybook, accounts receivable and case histories of patients spot-checked periodically for discrepancies and irregularities?

10. Are all employees handling cash receipts covered by fidelity bond or dishonesty insurance?

These and other safeguards which can be established, and which will provide maximum protection against employee dishonesty, certainly should be observed in every office. But as previously stated, nothing can provide absolute protection.

The fact that employees are covered by fidelity bonds acts, in itself, as a deterrent against theft and embezzlement, since it makes the offense somewhat more serious than otherwise, and more likely to be detected, publicized and punished.

The next question is: "For how much should a doctor's employees be bonded?" After considering the matter thoroughly, we feel that the following simple formula is valid for determining risk exposure, and can be used for dental and medical offices:

1. Ten per cent of annual gross receipts ..... $_____

2. Ten per cent of current assets (i.e., cash on hand, bank accounts, securities, and drug and supply inventories) ..... $_____

Total (i.e., the risk exposure) $_____

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

The following amounts of insurance should be carried for various risk exposures:

Up to $25,000	Equal to exposure (minimum $10,000)
$25,000 to $125,000	$25,000 to $50,000
$125,000 to $250,000	$50,000 to $75,000
$250,000 to $500,000	$75,000 to $100,000

Remember that no one is immune to employee dishonesty. Your only assurance of maximum protection is a system of adequate internal control, plus bonding of each employee who has access to moneys or valuable properties in your office.

The Russian Approach to Psychiatry

According to Dr. Mark G. Field, professor of sociology and anthropology at Boston University, who has made a career of studying Soviet education and medicine, Soviet doctors may be doing a better job in psychiatry than Americans, whether through design or necessity. His conclusions about the Russian practice of psychiatry will doubtless stir angry denials, but are partially supported by conclusions of the American Psychiatric Association. A summary of a 58-page report on the subject by Dr. Field, was recently released. The report is full of challenges to American mental health experts. "There are," says Dr. Field, "very important basic differences in Russian and U. S. ways of thinking about the problem."

In the Soviet Union, neurologists and psychiatrists tend to practice interchangeably in the care of psychotics. Perhaps this is a reflection of the basic Russian disdain for Freud and an emphasis on the more physiologic approach of the Soviet idol in the field, Pavlov. Thus, including the neurologists, the Russians boast 8.4 psychiatrists per 100,000 as against the U. S. figure of 6.4. Because the Russians train many more doctors each year than the U. S., they can, if they choose, widen this difference.

But in Russia there are 1,040 persons for every psychiatric hospital bed, whereas in the U. S. there are 237 persons per bed. This leads to a more casual Russian attitude about the readmission of mentally ill patients. According to figures given Dr. Field, 8,500 of the 9,000 admissions each year to Moscow's Kashchenke Hospital—one of the largest in the Soviet Union devoted to care of psychotics—are in reality readmissions. (On the other hand, the ratio of first admission to readmissions is running close to two to one in the U. S. prolonged-care mental institutions.)

There is no reason to believe that the state of Russian mental health is in any way superior to that of the U. S., says Dr. Field. And he notes that the number of Russian psychiatric beds has been doubled in the last decade, and that the number of mental hospitals has increased 60 per cent while the population rise has amounted to only 16 per cent.

But the Russian advantage is in psychiatric-hospital personnel—a one-for-one ratio of caretakers to patients compared to the U. S. figure of one-to-four, and there are 27.4 patients per Russian doctor in comparison to the U. S. public mental-hospital figure of 183.9 patients per doctor. This factor leads to more individual care for the Russian patient. Dr. Field attributes the preponderance of women doctors in Russia—three female to every male doctor—as being another factor in the individualized care given the patients.

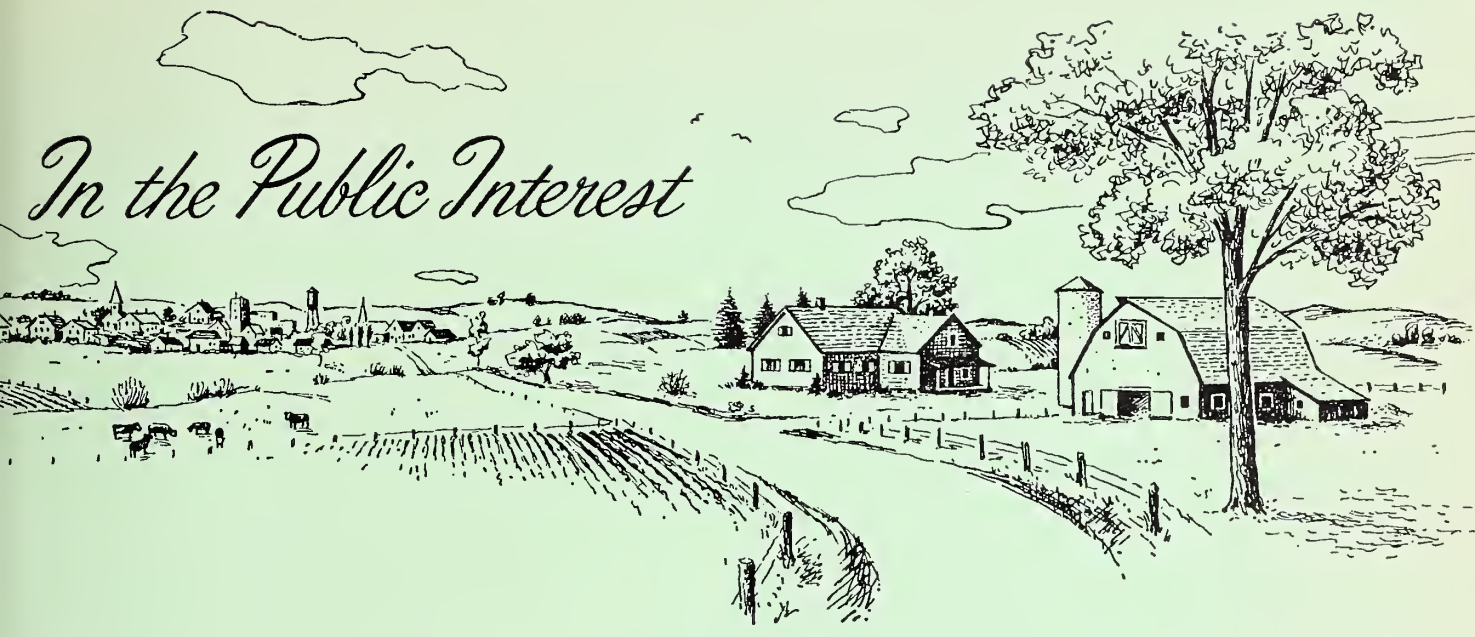
The key to Russia's success, Dr. Field believes, is the shortage of psychiatric beds which leads Russian doctors to strain every effort to return the patients to society, even if they must come back into the hospital in a few months. But there is virtually no vegetating of patients such as occurs in some U. S. state institutions. The Russian hospitals themselves never develop into the segregated communities that are so typical of American mental care.

Dr. Field comments: "As the American Psychiatric Association has pointed out, it is suspected that the very existence of mental hospital beds has created a tradition that militates against the use of simpler methods of dealing wtih mental illness and that countries that do not have elaborate hospital systems may find better ways of treating and managing the mentally ill." Dr. Field also notes that not every Russian community has a comprehensive neuro-psychiatric clinic or dispensary, but that many such exist in the Soviet Union which are directly in line with the most advanced psychiatric thinking in the Western countries.

In Russia, reports Dr. Field, there is a provision for the mentally ill worker to continue receiving income while he is incapacitated. Under the state-run medicine, there is no consideration of financial status or any other eligibility criteria other than the illness itself.

Russian psychiatry still clings stubbornly to the prime role of the environment in creating mental health or disease. As a result, Russian research is heavily oriented toward conditioning. Dr. Field makes no attempt to credit Russian psychiatry with deliberately planning a better care system. In fact he suspects that its roots lie in a rationalization of the hospital bed shortage plus the pressing need of the state to keep its working force productive.

"Still," he writes, "a comparison of the Soviet and American psychiatric systems makes one wonder whether, in the last analysis, the medical and public health approach (so often advocated in the U. S.) is a suitable one or an exclusive one for this range of phenomena. The concept of 'cure' may also be inadequate and may have to give way to another such as adaption or adjustment."



The State Medical Journal Preforms Essential Tasks

Members of the Iowa Medical Society, and members of comparable organizations in other parts of the country, should assess the contributions that their respective state medical journals make to postgraduate medical education, the part they play in publicizing important announcements, and the work they do in preserving and improving relationships between the medical profession and the various other groups that are concerned about the eradication of disease.

Like the others of about 35 state or regional medical publications in the United States, the JOURNAL OF THE IOWA MEDICAL SOCIETY helps unite doctors in a major geographic group, despite the growth of specialization that has divided the profession into segments, each with its particular sphere of interest, its more or less separate body of knowledge and its voluminous literature. It may not be an exaggeration to say that the JOURNAL is the principal means by which that cohesiveness is perpetuated.

THE STATE JOURNAL HAS A WELL-DEFINED PLACE IN MEDICAL EDUCATION

The JOURNAL is the principal means by which doctors are kept informed about health problems of local importance and about the steps that are being taken to solve them, and it is the means by which doctors are provided notices, in semi-permanent form, of new rules and programs that have been initiated by the State Department of Health and other authorities. By printing reports from medical society officers, committees and individual members, and by publishing clinical pathologic conference reports and special articles from the S.U.I. College of Medicine, moreover, the JOURNAL facilitates a close understanding and mutual respect between the medical faculty and the private practitioners throughout the state.

Most importantly, perhaps, the JOURNAL furnishes doctors with printed versions of important lectures that have been presented at the annual meeting of the Iowa Medical Society and at other postgraduate medical short-courses and conferences within Iowa. Physicians who haven't been free to attend those meetings can thus acquaint themselves with the ideas that were offered there, and the doctors who actually were present can refresh their recollections of what was said, before attempting to make use of the new technics in treating their patients. It often happens, in a particular practice, that considerable periods elapse between the times when a doctor has occasion to use a new method that he has heard described, and thus the published version of a speaker's presentation may have continuing value. In addition, by welcoming case reports and results of surveys, however modest, the JOURNAL encourages men who serve communities distant from medical centers to persevere in research and to make their findings generally known.

A regular feature in the Iowa JOURNAL and in a few of the others consists of a chronological list of "coming meetings," and detailed programs of the conferences that are soon to be held within the state. The primary purpose of the "coming meet-

ings" list is to promote attendance at refresher courses, but by calling attention to those that are to occur throughout the nation and abroad, it enables doctors, in some instances, to combine a few days of instruction with a contemplated vacation trip. Since announcements of most meetings reach the editors several months in advance, and the essential information is kept on file, doctors who wish to make their plans far ahead of time are invited to write or phone the JOURNAL for additional data. Similarly, to avoid conflicts, program chairmen might well make such inquiries before settling definitely upon dates for the conferences they are planning to hold.

It has been many years since state medical journals had an appreciable share in publishing first reports of major medical discoveries, for researchers quite justifiably prefer to announce their principal findings in national or international media. Rather, the state journals make it their business to print more immediately applicable scientific material. They welcome—and indeed they frequently commission—reviews of recent advances and current concepts in the prevention or in the diagnosis and treatment of particular diseases. In other words, their major function is to disseminate how-best-to-do-it information.

The state medical journals also strive to help physicians in keeping abreast of developments in fields other than their own. As concisely as possible, they offer the gist of recent discoveries in each of the specialties. They help inform general practitioners about the procedures that may be available to their patients on referral; they inform surgeons and internists about the most recent speculations or conclusions of the psychiatrists; they inform clinicians of various sorts about the precautions that pathologists wish them to observe in collecting specimens for laboratory study; and they provide bibliographic data so that any reader who wishes to pursue any of these topics further can easily do so. In addition, the scientific editors of state publications monitor the successive issues of many specialty journals and call attention to significant articles that might otherwise escape the notice of a great majority of doctors.

Each issue includes several book reviews. The fact that most of them are laudatory has excited some doctors' suspicions, and a word of explanation thus seems required. In the first place, because the medical book market is relatively small and because printing costs are high, few genuinely worthless texts reach print. Second, when a reviewer receives a book from the scientific editor of the JOURNAL, an accompanying note asks him to submit his comments for publication only if he thinks the volume deserves his colleagues' attention. In consequence, a thoroughly disparaging review appears only when the reviewer has decided that physicians need particularly to be warned regarding a book.

THE STATE JOURNALS HELP SUSTAIN MEDICINE'S IMAGE

Each state medical journal shows the aspects of organized medicine that the public regards as most valuable. Even the widest-ranging of lay readers rarely have occasion to scan their state medical society's publication, and even less often do they actually read any of the articles that appear in it. Nevertheless, even by hearsay, it pleases them to learn of the importance that doctors thus regularly assign to social and health problems at the state level. They hear of the AMA quite often, and they respect the pronouncements it makes to Congressional committees or to the national press, but they reserve their wholehearted approval for their state medical society's journal, for its very existence is evidence that their neighbors, the physicians in their state, are contributing to the advances of medicine and are alert to utilize fully-proved discoveries in caring for local people.

The journals help significantly in unifying physicians with allied groups. By alloting a page or two every month to each of several affiliated organizations, they demonstrate medicine's continuing appreciation of the support it receives from them. It is quite possible that this reassurance sustains and intensifies the efforts exerted by these groups on behalf of medicine's objectives.

Each state journal also serves as its society's bulletin board. It reports the recommendations of its committees, councils and trustees, and it publishes the minutes of its house of delegates. Though such reading matter isn't always exhilarating, it is indispensible to the conduct of democratic processes.

SUMMARY

Each state's medical journal is vital to the society that sponsors it. It provides almost indispensible services both to individual practicing physicians and, indirectly, to their patients, and it does much to sustain the image of organized medicine as a public-service organization. The editors want their publications to become even more useful, and they solicit doctors' suggestions for improving them.

To Refill or Not to Refill

The complexity and potentiality for both good and harm inherent in today's modern therapeutic agents demand that proper control over the use of drugs be exercised. Years ago when the therapeutic agents played a much lesser role in patient treatment, the matter of refilling prescriptions developed into a relatively regular pattern. Today, however, a much greater degree of responsibility must reside with both the physician and the pharmacist in order that the patient's best interest is served. The unlimited dosing with medication by the patient can produce irreparable harm. And long term toxicity with many of our newer medications is not uncommon.

In addition to the professional responsibility which is involved with the refilling of prescriptions, there is a legal requirement which is imposed upon the pharmacist. The Federal Food, Drug and Cosmetic Act specifically states that a drug bearing the legend "Caution—Federal Law Prohibits Dispensing without Prescription" cannot be dispensed unless with the specific authorization of the physician. Since the original medication prescribed by the physician reflects the result of his diagnosis and considered opinion as to the patient's needs, it follows that he should be knowledgeable with respect to the amount and length of time that such medication is to be utilized by the patient. The drugs covered by such legal requirement include almost all of those commonly prescribed from digitoxin to Phenurone, including the antibiotics, the thiazides and all of the newer therapeutic agents.

Thus, it is obvious that a burden is placed on both physician and pharmacist to see to it that the patient's legitimate medication requirements are met with minimum inconvenience to all concerned and a proper appreciation and respect for the physician's treatment engendered in the mind of the patient. There are two common ways in which renewals of prescriptions can be handled. The first of these is by the physician's specifically indicating on his original prescription, his refill instructions. These include the authorization of a fixed number of renewals or an indication that no renewals of the prescription should be made by the pharmacist. Such instructions will insure that the physician's desires are followed and the patient will receive the medication without interruption. Should the physician fail to make any notation, the pharmacist is placed in a difficult position when faced with the patient who seeks to have a prescription renewed.

In this case, the pharmacist must resort to the second alternative and call the physician for his oral authorization to renew the prescription. Many physicians have become somewhat disturbed by the increasing number of telephone calls that they are receiving from pharmacists, and on occasion have even refused to acknowledge or return such calls. This is a practice which is most reprehensible. This is not a procedure which the pharmacist relishes, but the patient's best interest and the law require that the physician be completely informed as to the medication being taken by his patients.

In addition, there is the problem of professional liability. Court cases have been decided in favor of patients when the proper care and procedures were not followed by physician or pharmacist. The failure of the physician to specify renewal instructions can cause patient dissatisfaction and create a situation which will alienate persons from the health professions.

A practice has developed in some areas whereby physicians are limiting the hours when they will accept calls from pharmacists, and unfortunately the patients are not aware of this and cannot understand why they are denied their medication when they request it. Such a procedure is a severe handicap in view of the fact that the patient's needs and requests frequently cannot be anticipated and scheduled into a time period which has been arbitrarily proclaimed acceptable to the prescriber. Resentment develops, and the patients question whether the health professions are genuinely concerned about them. Frequently the physician, when confronted by the patient, can save a great deal of the patient's time by calling the pharmacist rather than waiting for the pharmacist to call him—which usually occurs at the most inopportune time.

The free practice of the health professions of this country will continue only if the public is convinced that its best interests are being served by the methods employed. Medicine and Pharmacy working cooperatively as separate and distinct professions, yet through combined efforts and actions, can insure our system of medical care. Mutual respect, understanding and cooperation are necessary. By specifying renewal instructions on the prescription or by graciously accepting telephonic communications, the physician can avoid inconvenience to himself, his patient and the pharmacist and avoid placing the pharmacist in a compromising position. He can insure that the patient's medication needs are properly satisfied and the necessary safeguards are provided at the least possible cost. Better public and interprofessional understanding must ensue from such cooperative practice, and better patient care must necessarily result.

B. S. Rogers, Jacksonville
President-Elect
American College of Apothecaries,
in the JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION, 50:292, (Oct.) 1963.

STATE DEPARTMENT OF HEALTH

RALPH H. HEEREN, M.D., ACTING COMMISSIONER

Nutrition Survey Plan for Iowa

A nutrition survey of the State of Iowa is planned to begin approximately February 1, 1964. The survey plans have been developed collaboratively by Drs. Robert E. Hodges and Willard A. Krehl, of the Department of Medicine, State University of Iowa, Iowa City, and Dr. Norman V. Strand, professor of statistics at Iowa State University, Ames. This survey is designed principally to gather data regarding the nutritional status of teenagers, and it will be conducted in approximately 30 communities throughout the state, randomly selected on a statistical basis so that the final results of the survey can provide statistically sound information.

What are the values of a nutrition study among teenagers in the State of Iowa, an area that is certainly blessed with the greatest abundance and quality of foods, from the standpoints of both production and availability? Despite these advantages that Iowa enjoys, there is strong evidence to suggest that many individuals fail to select properly, and hence may have considerably less than optimal nutrition. Groups which are exposed to the greatest physiologic stresses may more clearly reflect the results of poor dietary selection. For this reason, teenage children who are highly active, rapidly growing and very susceptible to fads and fancies should be an important group to study.

Further, it is believed that this nutrition survey offers a unique opportunity to establish a baseline in a group of people who can be followed on a longitudinal basis for many years to come. By learning the nutritional habits and patterns of this group, we can establish a base from which to study the influence of diet on the chronic degenerative diseases in the future. Despite the tremendous advances of medical science, our ability to reduce the morbidity and mortality rates of diseases of a chronic and degenerative nature unquestionably has not kept pace. Herein lies the one great gap in our medical progress. Much has been said and proposed about the role of the diet in chronic degenerative diseases, but until scientists start observing a group that they can follow over a period of years, they will be unable to answer the question, "Is diet of significance in the development of chronic degenerative disease?"

In each community surveyed, a team of physicians and nutritionists will visit the community and examine a statistically selected sample of the school children to determine their nutritional and dental status by means of physical examinations. A sample of this large group will then be randomly selected for more detailed physical examinations, and from this second group a predetermined number will be chosen for detailed biochemical analyses of blood and urine. Dr. Strand has developed the statistical aspects of the nutrition survey. The nutritionists on the team will go into selected homes and visit with the parents in order to obtain detailed information on the children's dietary histories. We hope thereby to combine the information derived from the clinical, biochemical and nutritional dietary history, so as to obtain the greatest possible amount of information on the nutritional status of this most important group of Iowa citizens, the children.

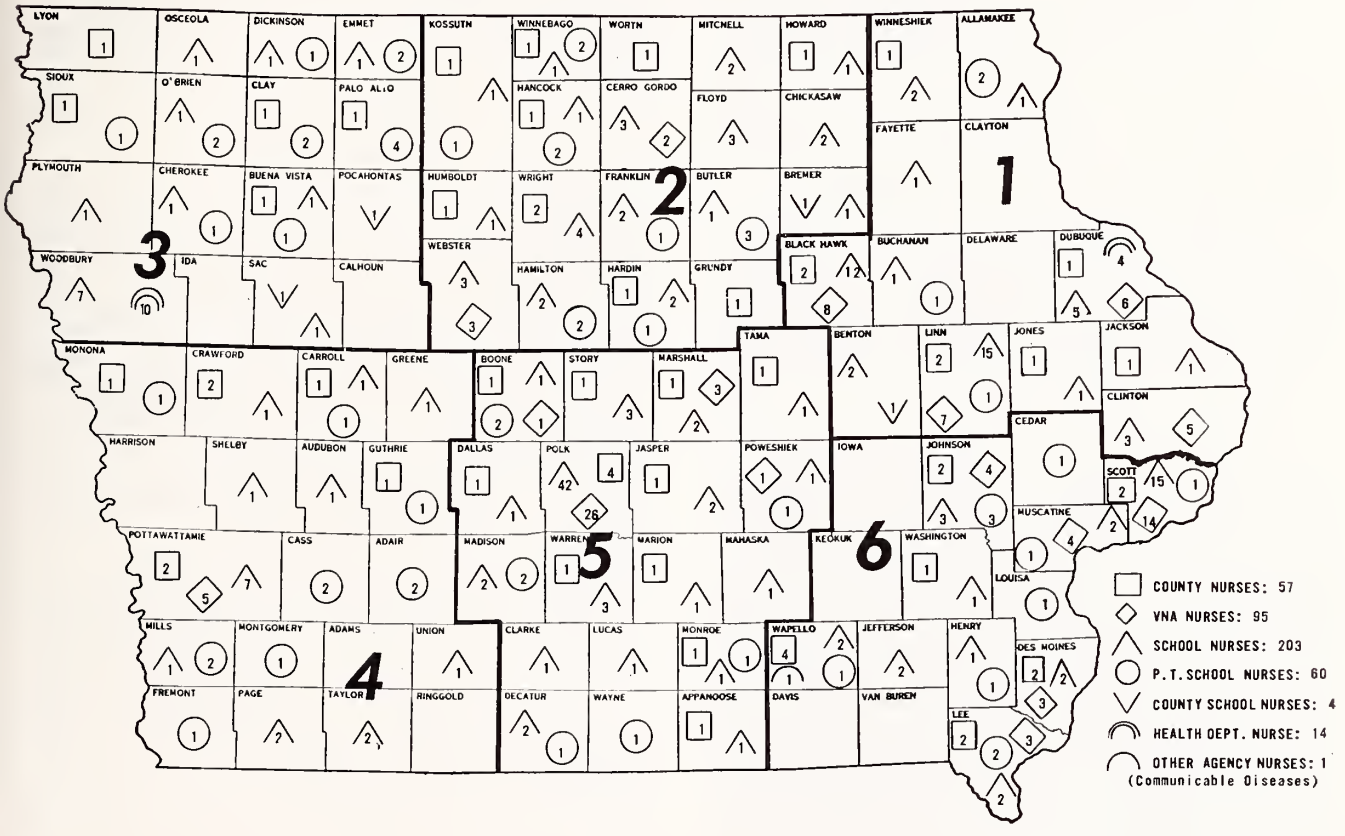
In its first year, the program of the nutrition survey will involve approximately 3,500-4,000 Iowa teenagers in school grades nine through 12. To maintain continuity and yet to eliminate bias from the study, one-half of the first year's group will be followed, and replacements will be made to fill in for those eliminated from the first year's program. These additions, therefore, will approximately double the program. This enlarged survey will continue for the remaining three years. It is intended that the survey will be continued for a five-year period.

Fortunately the program of medical care afforded by the S.U.I. Medical School is sufficiently broad in its scope to provide an unusually fine opportunity for following the medical problems of citizens in every Iowa community.

The aims and goals of this nutrition survey have received the approval of the State Department of Health and of the Iowa Medical Society.

IOWA PUBLIC HEALTH NURSING SERVICES

November 1, 1963



The accompanying map shows the various types of public health nursing programs in the various Iowa counties, with the number of nurses in each service. College nurses and nurses in industry have not been included.

It will be noted that there are 11 counties in which no public health nursing service is available from any local source. A limited amount of service is given in these areas, as well as in others, by nurses employed on a state-wide basis by the Iowa State Department of Health and the State Services for Crippled Children. Services provided by the state agencies to the local areas relate primarily to activities associated with communicable disease control and in the interest of children handicapped by orthopedic, heart and diabetic conditions.

County public health nurses are employed by boards of supervisors in cooperation with the Iowa State Department of Health. These nurses provide a generalized service embracing any health problems that may befall a family, regardless of financial circumstances. Communicable disease, maternity, infant and pre-school health, and chronic disease service (including tuberculosis, venereal disease, cancer, heart and orthopedic nursing) are of concern to her. Her chief objective is prevention of illness and promotion of health. She is also available to give therapeutic and rehabilitative nursing services. She works with physicians and dentists, and coordinates her activities with those of other agencies to prevent a duplication of effort and service.

The visiting nurse organizations give generalized public health nursing service within the limits of the cities in which they are located. Their service is generalized and is similar to that of the county public health nurses, except that in most of these agencies considerably more patient care is given. Their service to schools is usually limited to parochial institutions since in most of the cities where visiting-nurse organizations exist, school nursing is done by nurses employed by boards of education.

For the most part, the school nurses employed by boards of education give service to school-age children. In addition to caring for minor ailments in the schools, and visiting the homes of children with communicable disease or physical defects, modern concepts require the school nurse to co-

operate with medical, social, school and community groups in planning a coordinated health program to meet the needs of the school child in relation to his physical and mental health.

Other services provided by the public health nurses employed by official or non-official agencies are modifications of the three types already described. Some may be limited to a special condition or age group, but the basic principles relating to the prevention of disease and to the promotion and restoration of health apply to all public health nursing, wherever it is practiced.

The demand for public health nursing—especially for generalized services—has increased far beyond the capacities of the available public health nurses. If the supply is to keep up with and to satisfy the increasing demand, we must look to local communities to provide recruits for nursing.

Donate Your Body for Medical Science

About 28,000 Iowans die each year, but from that number our medical schools cannot get all of the 125 bodies they need for training tomorrow's medical scientists.

In the early years the unclaimed bodies of indigent persons supplied most of the needs of the medical schools, but in the 1930's many forms of social welfare legislation were passed which provided burial payments for the indigent, and now nearly everyone seems to be covered with social security or other welfare benefits that finance burial. This development has created a shortage of anatomical material.

In some states, and we hope in Iowa, the shortage of bodies for study will be overcome in the years ahead by an ever increasing number of people who will bequeath their bodies after death to medical schools.

Iowa law provides that any person over 21 years of age may, by his will or by a written instrument executed in the same manner as a deed, arrange for the disposition, after death, of his body or any organs, members or parts thereof, for scientific use or for the advancement of medical science. The person or persons having the right to a body for burial may likewise consent to such use of the body or parts thereof.

The medical schools will pay reasonable transportation costs in securing the bodies, and also will pay the funeral director for embalming, if embalming is necessary. The schools would prefer to receive bodies unembalmed.

The law also requires that the remains be decently buried or cremated by the school after the body has been used for scientific purposes.

The necessary forms and other information can be obtained by writing to your medical school.

Morbidity Report for Month of December 1963

Diseases	1963 Dec.	1963 Nov.	1962 Dec.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	198	257	261	Howard, Jefferson, Johnson
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	116	37	744	Polk
Whooping cough	3	8	13	Des Moines
Brucellosis	24	7	7	Scott
Chickenpox	267	135	877	Clay, Des Moines, Hamilton, Polk, Scott
Meningococcic meningitis	1	0	0	Polk
Mumps	771	709	154	Dubuque, Polk, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	27	19	29	Carroll, Guthrie, Tama
Rabies in animals	21	24	20	Cedar, Jefferson, Linn, Polk, Scott
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	38	25	32	For the state
Syphilis	65	52	70	For the state
Gonorrhea	108	103	157	For the state
Histoplasmosis	2	1	21	Jasper, Palo Alto
Food intoxication	35	25	0	Dubuque
Meningitis (type unspecified)	5	3	0	Emmet, Jasper, Madison, Polk, Winneshiek
Diphtheria carrier	0	0	29	
Aseptic meningitis	0	0	0	
Salmonellosis	8	4	0	Polk
Tetanus	0	2	0	
Chancroid	0	0	1	
Encephalitis (type unspeified)	0	0	1	
H. influenzal meningitis	0	0	0	
Amebiasis	4	6	0	Boone
Shigellosis	0	6	1	
Influenza	330	318	0	Polk

Woman's Auxiliary News

District Meeting

The District VIII meeting was held at the Davenport Outing Club on October 19, 1963 in Davenport, Iowa. The meeting was called to order by Mrs. James Bishop, councilor for District VIII, with 36 persons in attendance. Mrs. Mary McMillan opened the meeting with the Auxiliary Pledge.

Our guests were welcomed by Mrs. Robert McConnell, Scott County Woman's Medical Auxiliary President. We had representatives from Polk, North Lee, Jefferson, Muscatine (unorganized), and Des Moines counties. Officers from the State Auxiliary were introduced by Mrs. Bishop. Those present were: President—Mrs. Mary McMillan; President Elect—Mrs. Janet Ellis; Corresponding Secretary —Mrs. Kathryn Poepsel; Administrative Secretary —Mrs. Hazel Lammey.

Mrs. Ellis introduced Dr. Frank Ober, of Burlington, chairman of the Congressional District I Physicians Political League. These are politically crucial years for the medical profession, and Dr. Ober feels that the time has come for doctors and their wives to enter the field of politics. However, it is vital for people in the medical field to be well informed about the issues involved. Consequently, a committee has been formed to activate "Operation Barnstormer." As is the case with all new committees, money is badly needed. If every doctor contributes $25.00 and his wife contributes $10.00, "Operation Barnstomer" will have a good foothold in the fight against governmental medicine.

Information—Mrs. McMillan explained how helpful the BULLETIN can be in assisting our Auxiliary in its many projects, and also the many services that the Auxiliary can perform on both state and community levels.

Donations—AMA-ERF—Mrs. McMillan explained the importance for supporting this project.

Membership—Mrs. Ellis gave us ideas for enlarging our membership—Check community for new doctor's wives; go through membership lists for dropouts and encourage them to rejoin; make every member feel that her contribution is appreciated and needed.

Legislation—New project, "Operation Barnstormer." Mrs. Ellis asked for Auxiliary cooperation to make this vital project a success. She explained the How, Why, and When of this new idea in helping to achieve better medical legislation.

Something New—There is a film about doctor-clergyman cooperation, entitled "The One Who Heals." This film is very new and is now available for Auxiliary use. It is obtainable from AMA headquarters in Chicago.

Safety—The Committee has prepared a new safety skit that covers the subjects of Accidental Falls, Fires, Poisons, Guns, and Water Safety. Each subject is set to a tune of an old song—i.e., Fires, Tune—"Hot Time in the Old Town Tonight," etc. These Safety Skits are available for Auxiliary programs, schools, and other Civic groups.

Health Careers—Mrs. McMillan asked for help of Medical Auxiliaries in interesting the high school students to seek careers in the Fields of Health. This can be done by contacting school councilors and students, and making them aware of the potentialities in this field. Literature is always available at the State Auxiliary Headquarters in Des Moines.

International Health—Mrs. Ellis told us of the work that is being done by the Medical Auxiliaries in furnishing drugs, instruments, textbooks, etc. for Medical Aid. She also mentioned briefly the talk given by Dr. William Walsh, director of the "Project Hope" at the National Auxiliary Convention.

Mental Health—Mrs. Louise Goldman informed us of the progress made, this past year, in providing volunteers for service in various mental homes and hospitals. The National Institute of Mental Health has published a new booklet entitled "Facts About Suicide," which deals with the causes and ways of preventing suicide.

Rural Health—the Auxiliary can provide assistance in public immunization programs—Salk, Sabin, etc.

Community Service-Essay Contest-Handicraft Sales—Mrs. Poepsel told about articles made by handicapped persons over the state under supervision of the Iowa Society for Crippled Children and Adults, which are sold on their behalf at craft sales sponsored by the Iowa Medical Auxiliary. Thus these people are helped toward supporting themselves and their families.

Mrs. McConnell reported on progress and projects in Scott County for the past year. Mrs. Poepsel also informed us as to the activities of the North Lee County Auxiliary.

—MRS. JEAN DAUT, *Secretary Pro Tem*

Surprises in Safety Figures

The Auxiliary has great concern for safety. A total of 96,500 lives were lost in accidents throughout America last year. Of that number, 41,000 died in traffic accidents. Four million people were hurt in accidents in and around the home, and of that number 28,500 died—more than from TB, diphtheria, polio, syphilis, rheumatic fever and murder combined. The accidents were mainly falls. However 1,350 persons were victims of poisoning, and firearms accidents, the fifth leading cause of death in homes, maimed 1,200—a shocking figure!

Since a *half* of all home-accident victims were over 65, and a *fourth* were under five years of age, it is easy to see where our main efforts should be directed.

Although participation in public recreation has quadrupled in the past 13 years, the accident rates for sports have not changed. Still, boating fatalities total about 1,000 a year, and swimming deaths, 4,000.

Our greatest enemy is public apathy toward safety. If a scientist were to discover a pill to overcome it, 100,000 lives a year could be saved. Auxiliary can only continue to chip away at the problems through GEMS (babysitter training), SWAT (Safe Water Activity Training), training in safe gun-handling and the endless variety of programs sponsored or supported by Auxiliaries at the local level.

Neverthless Safety still remains one of our major problems, and every member is urged to participate in such programs.

International Health

Mrs. C. Rodney Stoltz, president of the Woman's Auxiliary to the American Medical Association, accepted an award on behalf of that organization at the 17th World Medical Assembly, recently, in New York City. The award, given for "outstanding services rendered to the World Medical Association in support of its scientific, educational and humanitarian objectives," will be displayed with other Auxiliary awards in the national headquarters office in Chicago.

Essay Contest

Just a reminder that the deadline date for submitting entries to the AAPS Essay Contest is approaching. The essays should soon reach the local sponsors for judging, for the winning papers must be in the hands of the State Medical Society by March 15. The three winning manuscripts at the state level are to be forwarded to the national AAPS headquarters before April 1.

Material is still available to assist the entrants in preparing their essays. The essays may be written on either of the following two topics: "The Advantages of Private Medical Care" or "The Advantages of the American Free Enterprise System over Communism."

News Notes

The Woman's Auxiliary to the Jefferson County Medical Society re-elected its entire slate of officers at a meeting January 13. Continuing in office will be Mrs. James Turner, president; Mrs. Jack Morgan, vice president; Mrs. Robert Ryan, secretary; and Mrs. John Castell, treasurer.

Mrs. C. F. Watson was hostess, and the meeting was held at Jefferson County Hospital. Following the business session, the group went to the home of Mrs. Ludwig Gittler for the program and refreshments.

* * *

County Auxiliaries who have held elections at any time since September, when the YEARBOOKS were issued, please send the winners' names to the headquarters office, 529-36th Street, Des Moines 50312, so that materials can be forwarded to your current officers.

* * *

George G. Gordon, M.D. the "star" of AMPAC's political education film "The Barnstormer" says: "Know your community. Political action is simply an extension of community action. In politics, power flows from the bottom up—not from the top down. Even the presidential election is determined by totaling the votes cast in all the nation's precincts—including yours. Thus, it is impossible to understand state or national politics, or the application of political power, without knowing what the score is in your own community!"

* * *

If you are a member of an organized Auxiliary, have you given to or mailed your current year's dues to your county auxiliary treasurer? If not, please do so NOW, so the payments and reports will reach the State Auxiliary treasurer in time for her to complete her reports and to meet the deadlines set up for her.

If you are a member-at-large and have not yet mailed your Auxiliary dues ($3.00), please forward them promptly to Mrs. M. B. Cunningham, treasurer, Norwalk, Iowa 50211 so she can issue your new membership card and keep her reports on members-at-large up to date.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. G. J. McMillan, 436 C Avenue, Fort Madison
President-Elect—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 12
Recording Secretary—Mrs. N. A. Schacht, 1025 North 23rd Street, Fort Dodge
Corresponding Secretary—Mrs. F. L. Poepsel, Box 176, West Point
Treasurer—Mrs. M. B. Cunningham, Norwalk
Editor of THE NEWS—Mrs. R. H. Palmer, Box 568, Postville

Transplants Pace Medical Progress

After decades of experimentation and frustration, solid advances in the ability to provide spare parts for the human body through organ transplantation were reported during 1963.

Accomplishments in this field added up to the most exciting medical story of the year—a year which also saw:

- Further indications that "ultimate weapons" against still-incurable cancer and virus diseases will be devised.
- A re-orientation of the nation's fight with mental illness.
- A growing national concern about what we're churning through our lungs.

With few exceptions, the major gains in organ transplantation were with kidneys. Kidney transplants between identical twins have been possible for the past decade. But until now, transplants between persons genetically different, even though they might be related by birth, offered little assurance of success and were reserved as a final desperate gamble against staggering odds.

The few surgeons skilled in transplants admit it's still a gamble. But the odds seem to be getting better, they report. This has been largely brought about through new methods for suppressing the immunological mechanism—the mechanism which enables our bodies to fight off invasive bacteria and viruses.

Early attempts to prevent rejection of transplants relied on irradiation with near lethal doses of x-rays. This killed off the defense mechanism fairly well, but it also largely destroyed the patient's ability to defend himself against ordinary germs. Then it was found that azathioprine (Imuran) and certain other drugs could be used to suppress, without destroying, that part of the immunological mechanism responsible for transplant rejection and still leave partially intact the body's defenses against germs.

Using this method, some pioneers in the field of kidney transplantation feel they now have a 50 per cent useful weapon against fatal, degenerative kidney disease, and expect a much higher degree of success in the future.

Moreover, the work with kidneys offers a possible springboard to the transplantation of other organs. Although there was no lasting success in attempts to transplant liver and lungs during the year, there were indications that these too may develop into effective measures. Some researchers feel that to be really practical on a wide scale, organs for transplantation should come from cadavers—persons killed in auto accidents, for instance—rather than living donors. And here too, there was progress during the year. One patient was reportedly alive and well nearly a year and a half after receiving a cadaver kidney.

Meanwhile, in an allied field, surgeons were reporting some successes in maintaining life in animals by means of artificial hearts. These "hearts" are air-powered plastic pumps small enough for implantation within the chest wall. It was predicted that within a few years, a similar heart would be pumping within a human being. Already at work are plastic valves, stitched into human hearts, and cadaver valves transplanted to living patients. Both methods demonstrated a high degree of success during the year.

At the same time replacement surgery was marking important gains, so was microbiology—the science that deals with cells, their functions and their infinitesimal components. One major result of such work was the purification of interferon. This is a protein produced by mammal cells which imparts to the cells some protection from virus infection. By isolating this substance, scientists now have a model which they hope can be duplicated in the laboratory. If interferon can be synthesized, it is reasoned, then it might be possible to prevent virus attacks by injecting concentrations of the antiviral agent. This could give medicine a weapon that would prevent or halt the course of virus infections for which there are no vaccines at present.

While the possibilities of a "shotgun" approach to virus disease prevention remains for the future, two types of vaccine were licensed during the year to combat an ancient viral enemy—measles. Both vaccines were based on the work of virologist John F. Enders, who was presented the American Medical Association's Scientific Achievement Award for outstanding contributions to medicine by a non-physician.

Meanwhile, evidence continued to accumulate that viruses and cancer may have a connection. Although no virus has as yet been found that causes human cancer, several are known which induce cancer in laboratory animals. Findings such as these stimulated the organization during 1963 of a wide-scale effort to look for human cancer viruses. If they do actually exist, then it might be possible to develop anticancer vaccine.

Another hopeful line of cancer research was the discovery that retine (like interferon, a product of mammal cells) may have the ability to retard the growth of cancer tumors when supplied in heavy doses. Experiments with mice seem to confirm this fact.

On the debit side, lung disease was on the increase during the year, including lung cancer and emphysema. The reasons were not firmly defined, but the two principal suspects, air pollution and smoking, were under close study.

Congress concluded hearings on seven bills aimed at control of inter-state air pollution problems, and several states as well as most major industrial cities, renewed action toward further

reducing contamination wafted into the atmosphere.

At the same time, the Public Health Service was trying to wring conclusions from studies of the effects of smoking on health. A panel of scientists and physicians was set up by the PHS to review the evidence. In other areas of health, Congress approved measures providing matching grants for the construction and expansion of community mental health facilities and research centers. The legislation was an outgrowth of a new approach to the nation's mental health problems—one based on care in the community rather than in centralized institutions. Behind this change, first urged by the AMA's Council on Mental Health, was the discovery that with new drugs and new forms of therapy, the mentally ill and retarded respond best when care is carried out in the familiar community environment close to the patient's home.

Another piece of medical legislation provided for government grants for medical school construction and federal loans to medical students.

The stringent rules on research, following on the heels of last year's Thalidomide episode, helped mark 1963 as the low-point of the last 20 years in the introduction of new drugs. Also contributing to the slowdown in drug progress, manufacturers claimed, was the fact that the remaining key diseases are not well enough understood.

The year was not without drug progress, however. A new pain relieving drug, Pentazocine—as potent as morphine but non-addicting—was in the final stages of clinical research, and a new anti-leukemia drug, Vincristine, was introduced. Also developed was a technic for the synthesis of steroids. This could mean that hormone-like drugs could be tailor-made to fit specific situations. Using this new technic, a tissue-building substance and an oral contraceptive have already been manufactured in the laboratory.

"Threescore Years and Ten"

Lengthening the life-span of man is at an end. The mean expectation of life for white females is 74 years, and for white males, 67 years. About one-half year only has been added in the last 10 years. We physicians and the public have unwittingly considered that continuous extension of man's life-span would naturally result from improvements in medical technology. This belief was reasonable, since in the last 100 years about 30 years have been added to the average life-span.

Past extensions have resulted entirely from the elimination of what might be termed accidental deaths due to trauma, the infectious accidents, and problems of neonatal life. Even with the complete elimination of infectious diseases and the conquest of cancer in the future, significant further gains cannot be anticipated. These are the conclusions one must draw from the Metropolitan Life Insurance Company's Statistical Bulletin Vol. 44, of July, 1963.

Bernard L. Strehler, in his chapter "Dynamic Theories of Aging" in the symposium entitled "Aging" presented at the Chicago meeting of the American Association for the Advancement of Science, December, 1959, states: "Living systems are essentially energy transducers of a special type. Aging, in this context, can be defined as the regular and predictable failure of these transducers, due to internal, i.e. genetic factors."

The profession may well direct itself to success on the tactical front, so that modest gains in life expectancy are possible. Certainly, a life free of disease is no idle dream. The sociological implications are that we may anticipate a static population of the aged, rather than a continuing dynamic shift to increasing numbers of aging individuals. It would appear that physicians and laymen alike will then be directing most of their energies to improving our lot, rather than further lengthening of life.

"The days of our years are threescore years and ten; and if by reason of strength they be fourscore years, yet is their strength labour and sorrow; for it is soon cut off, and we fly away. . . ."

". . . So teach us to number our days, that we may apply our hearts unto wisdom."

Psalm 90:10, 12

—From an editorial in RHODE ISLAND M. J., 46:663-664, (Dec.) 1963.



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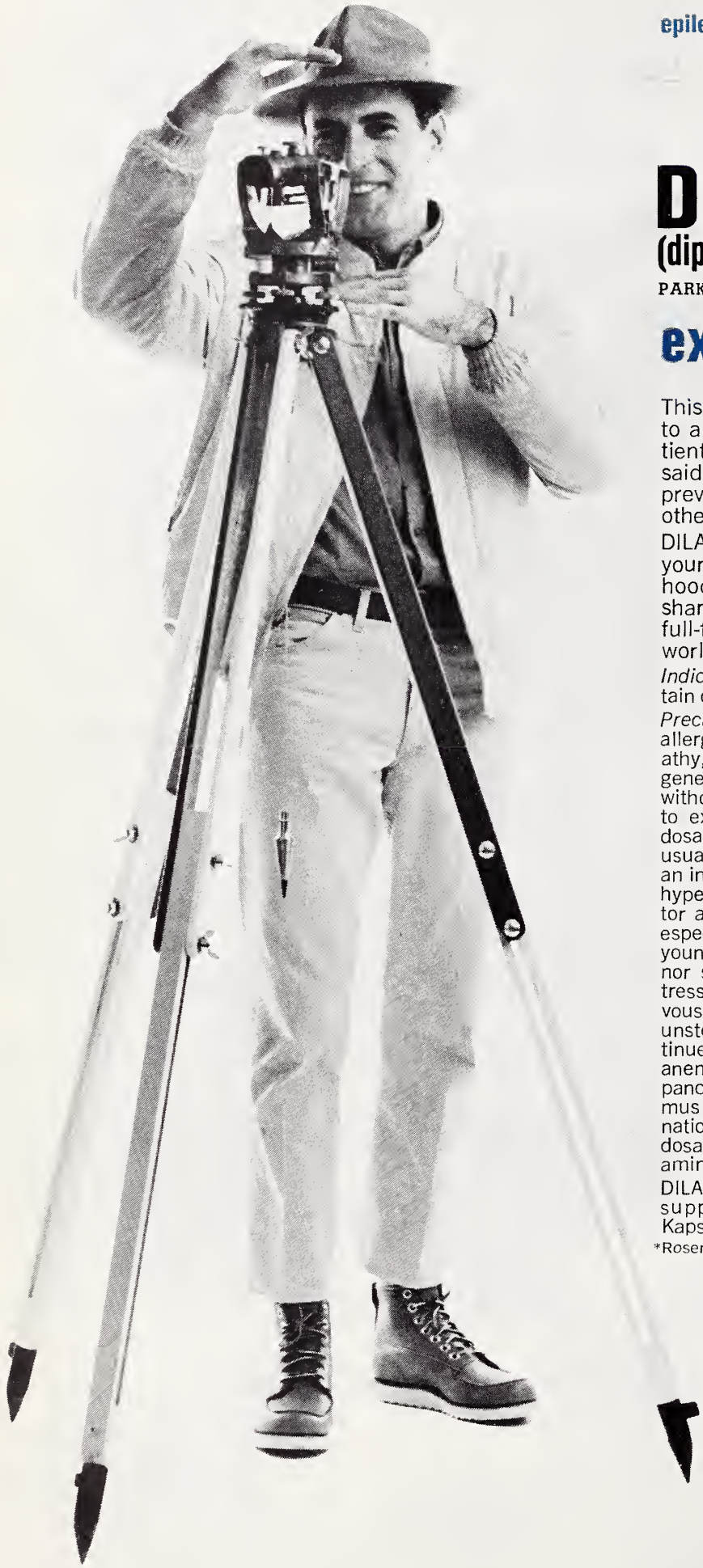
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*Roseman, E.: *Neurology* **11**:912, 1961. 33664

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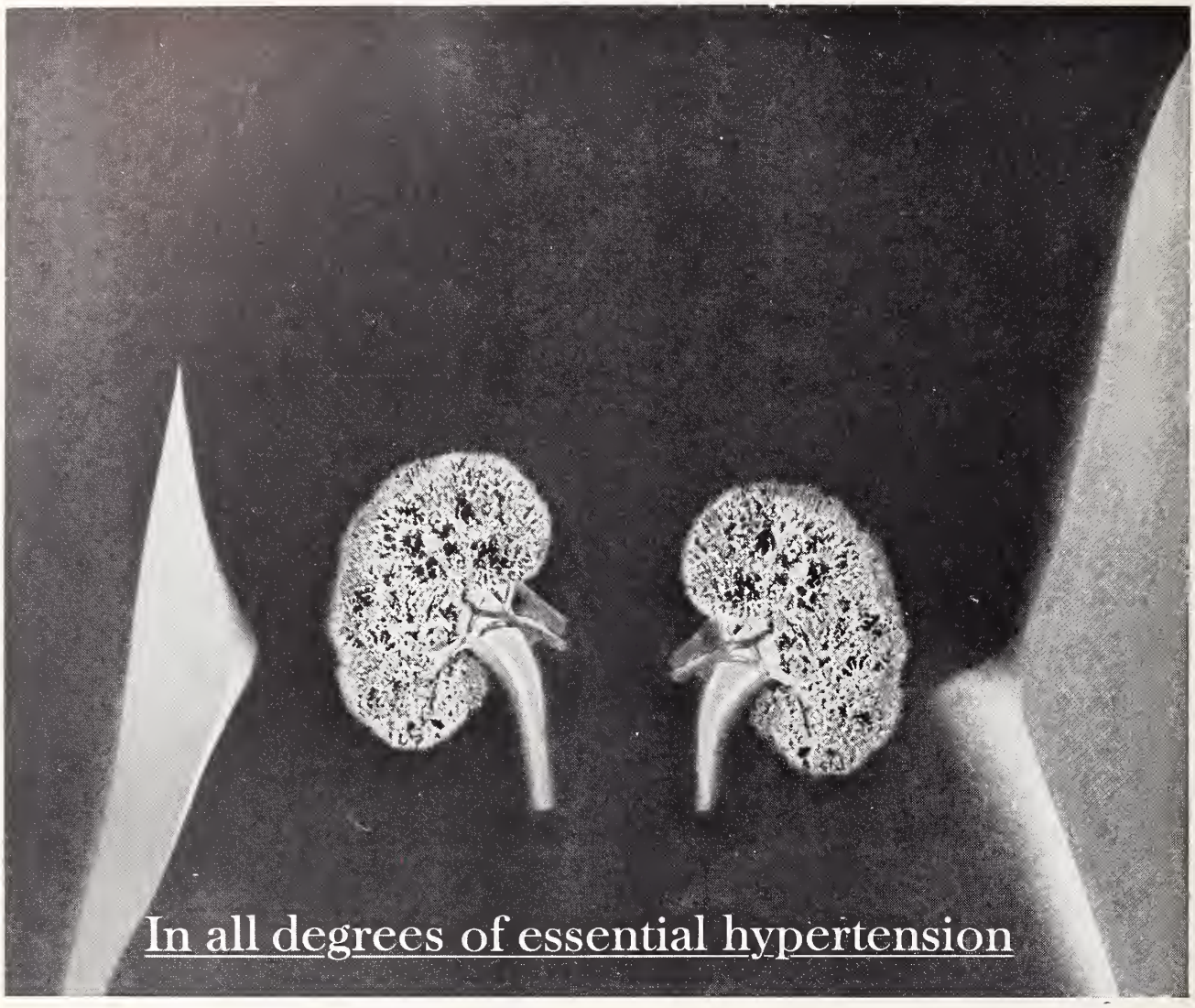
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President
Iowa Medical Society
1963-1964

GENERAL SESSIONS

Grand Ballroom

Monday Morning, April 27

8:00 a.m. EXHIBITS

8:55 a.m. Invocation
Father D. L. Delehant, Council Bluffs, Iowa

Superintendent, St. Albert's High School

9:00 a.m. Robert E. Carter, M.D., Iowa City, Iowa

"Training Medical Students for General Practice"

9:30 a.m. Jacques S. Gottlieb, M.D., Detroit, Michigan

"The Atypical Depressive Illness"

10:00 a.m. Mr. Harold J. Marshall, White Plains, New York

"Stitching the World of Money Together"

10:30 a.m. RECESS TO VISIT EXHIBITS

11:15 a.m. Mr. Charles Gavin, Northfield, Minnesota

"Preparing for, Entering, and Staying in College"

11:45 a.m. RECESS TO VISIT EXHIBITS

12:00 noon Luncheon—Grand Ballroom—Open to All Members

"The State of the Union"
The Honorable John G. Tower, Houston, Texas—United States Senator

Monday Afternoon, April 27

2:00 p.m. George A. Hellmuth, M.D., Milwaukee, Wisconsin

"The Role of the Medical School in Teaching Comprehensive and Family Medicine"

2:30 p.m. Mr. Roger Fleming, Washington, D. C.

"We're All in It Together"

3:00 p.m. RECESS TO VISIT EXHIBITS

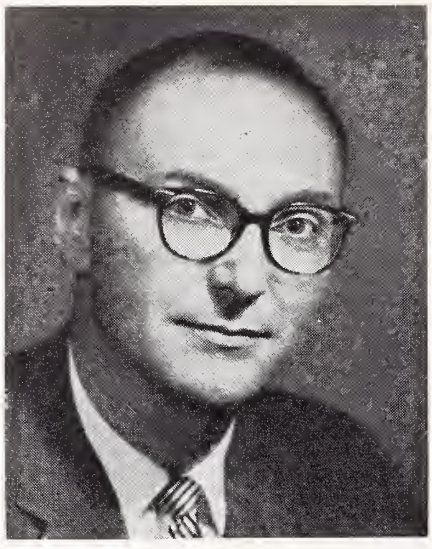
3:45 p.m. Mr. Bob Considine, New York, New York

"Rx for a Free Press"

4:15 p.m. Francis L. Land, M.D., Fort Wayne, Indiana

"Recruitment and Education for the Most Needed Physician"

This Program Is Acceptable for
7 ACCREDITED HOURS
by the
American Academy of General Practice


W. Turner Bynum, M.D., Oklahoma City, Oklahoma (left), is professor of medicine, University of Oklahoma School of Medicine; Senior Consultant in Internal Medicine, Veterans Administration Hospital; chairman, Advisory Committee of the Research Institute, Mercy Hospital Oklahoma City General; chairman, Governor's Commission for the Study of Alcoholism; charter member, American Society of Internal Medicine and Oklahoma Medical Research Foundation. **Richard M. Caplan, M.D., Iowa City, Iowa (center),** is assistant professor of dermatology, College of Medicine, State University of Iowa. **Robert E. Carter, M.D., Iowa City, Iowa (right),** is associate professor of pediatrics and assistant dean, College of Medicine, State University of Iowa.





Bob Considine, New York, New York (left), is author of the syndicated newspaper column, "On the Line"; recipient of Sigma Delta Chi award for Distinguished Service in American Journalism, Lasker Medical Journalism award, and Overseas Press Club Award for Best Reporting Abroad, for his series on the death and funeral of Pope Pius XII. **Roger Fleming, Washington, D. C. (center),** is secretary-treasurer and director of the Washington office, American Farm Bureau Federation. **Charles Gavin, Northfield, Minnesota (right),** is director of admissions, Carleton College; past president, Association of College Admissions Counselors.

General Sessions (Continued)

Grand Ballroom

Tuesday Morning, April 28

8:00 a.m. EXHIBITS

9:00 a.m. Robert L. Goodale, M.D., Minneapolis, Minnesota

"Gastric Freezing for Peptic Ulcer"

9:30 a.m. C. Allen Good, M.D., Rochester, Minnesota

"New Procedures in X-ray Diagnosis and What the Referring Physician Should Expect From the Radiologist"

10:00 a.m. W. Turner Bynum, M.D., Oklahoma City, Oklahoma

"Should We Alter Our Perspective About Gastric Malignancy?"

10:30 a.m. RECESS TO VISIT EXHIBITS

11:15 a.m. Stanley O. Hoerr, M.D., Cleveland, Ohio

"Surgery for Chronic Duodenal Ulcer: Fit the Operation to the Patient"

11:45 a.m. RECESS TO VISIT EXHIBITS

12:00 noon ERSKINE MEMORIAL LECTURE—Grand Ballroom—Luncheon—Open to All Members

PANEL DISCUSSION: PEPTIC ULCER

Herman J. Smith, M.D., Des Moines, Iowa—Moderator

W. Turner Bynum, M.D., Oklahoma City, Oklahoma

C. Allen Good, M.D., Rochester, Minnesota

Robert L. Goodale, M.D., Minneapolis, Minnesota

Stanley O. Hoerr, M.D., Cleveland, Ohio

Tuesday Afternoon, April 28

2:00 p.m. Richard M. Caplan, M.D., Iowa City, Iowa

"Skin Color as a Guide to Systemic Disease"

2:30 p.m. President's Address

Charles V. Edwards, Sr., M.D., Council Bluffs, Iowa

President, Iowa Medical Society

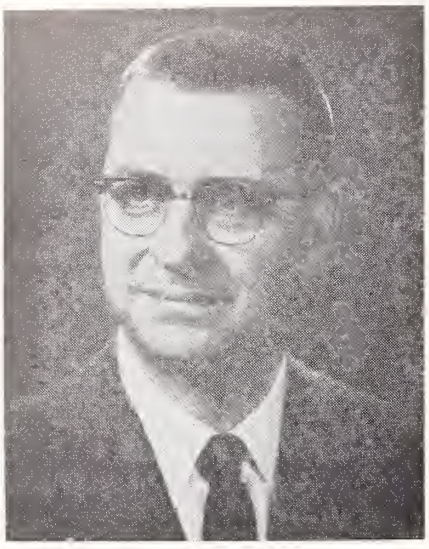
3:00 p.m. RECESS TO VISIT EXHIBITS

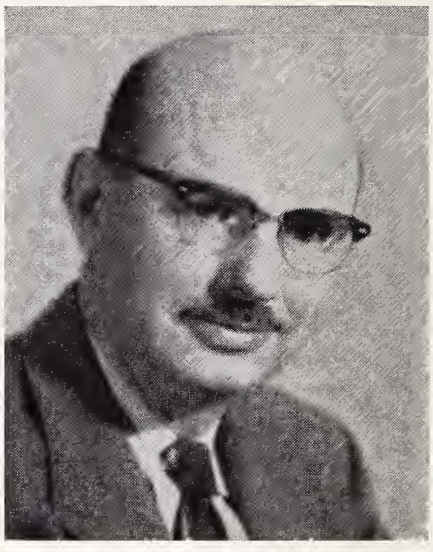
3:45 p.m. William R. Hamsa, M.D., Omaha, Nebraska

"Treatment of the Fractured Ankle"

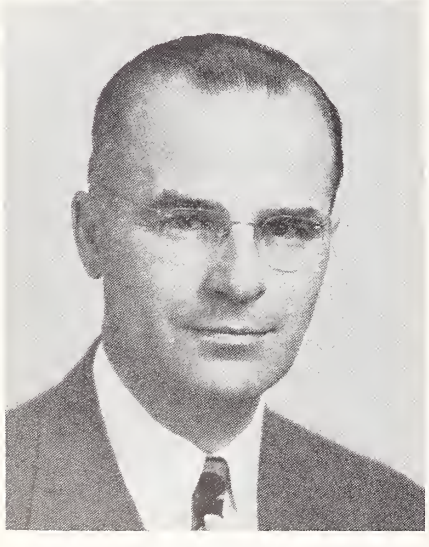
4:15 p.m. Elmer M. Smith, M.D., Des Moines, Iowa

"MAA in Iowa"





C. Allen Good, M.D., Rochester, Minnesota (left), is head, section of diagnostic roentgenology, Mayo Clinic; professor of radiology, Mayo Foundation, Graduate School, University of Minnesota; vice president, American Board of Radiology; secretary, American Roentgen Ray Society. **Robert L. Goodale, M.D., Minneapolis, Minnesota (center),** is surgical resident, University of Minnesota Hospitals, and chief resident in Dr. Owen H. Wangensteen's Research Laboratory. **Jacques S. Gottlieb, M.D., Detroit, Michigan (right),** is director, LaFayette Clinic; professor and chairman, Department of Psychiatry, College of Medicine, Wayne State University; director on the American Board of Psychiatry and Neurology, Inc.





William R. Hamsa, M.D., Omaha, Nebraska (left), is professor of Orthopaedic Surgery, University of Nebraska College of Medicine. **Stanley O. Hoerr, M.D., Cleveland, Ohio (center),** is staff surgeon and chairman, Division of Surgery, Cleveland Clinic Foundation; faculty member, Cleveland Clinic Education Foundation; member, Board of Governors, American College of Surgeons, and Advisory Board, AMERICAN JOURNAL OF SURGERY; past president, Cleveland Surgical Society and Ohio Chapter, American College of Surgeons. **George A. Hellmuth, M.D., Milwaukee, Wisconsin (right),** is associate professor of Preventive Medicine and Director, Cardiac Work Classification Unit and Section on Comprehensive and Family Medicine, Marquette University School of Medicine.

Special Meetings and Dinners

Sunday, April 26

GOLF TOURNAMENT

The Annual Golf Tournament will be held at the Wakonda Club. Physicians may begin play at any time during the day, but the majority will start at 1 p.m. Dinner and awarding of prizes will follow. Reservations should be made with Harold J. McCoy, M.D., 212 Bankers Trust Building, Des Moines 50309.

Monday, April 27

AMERICAN MEDICAL WOMEN'S ASSOCIATION, IOWA BRANCH 19

Members of the American Medical Women's Association, Iowa Branch 19, should register at the IMS Registration Desk, Fort Des Moines Hotel, on Monday. A meeting is being arranged for Monday evening, and specific details will be announced.

IOWA ACADEMY OF SURGERY

Wakonda Club

Business Meeting: 6 p.m.

Social Hour: 6:30 p.m.—Dinner: 8 p.m.

Reservations: R. E. Paul, M.D.
415 Equitable Building, Des Moines

IOWA ASSOCIATION OF PATHOLOGISTS AND IOWA SOCIETY OF MEDICAL TECHNOLOGISTS

Hotel Fort Des Moines—Room 331
Business Meeting (I.A.P.)—5 p.m.

Cloud Room, Des Moines Municipal Airport
Social Hour: 6:30 p.m.—Dinner: 7:45 p.m.

Guest Speaker: Mr. Robert H. Storey
Abbott Laboratories, North Chicago, Illinois
"Medical Applications of Radioisotopes"

Reservations: C. H. Denser, M.D.
1073 Fifth Street, Des Moines

IOWA PSYCHIATRIC SOCIETY

Hotel Savery

Social Hour: 6 p.m.—Parlors C and D

Dinner: 7 p.m.—West Room

Reservations: J. O. Cromwell, M.D.

Division of Mental Health, Board of Control
State Office Building, Des Moines

VISIT YOUR EXHIBITS

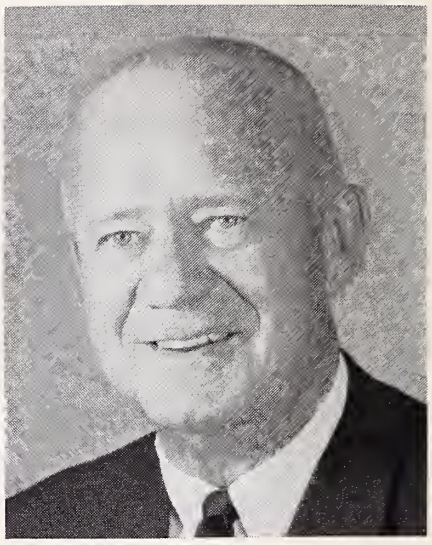
HOTEL FORT DES MOINES

Technical Exhibits—Mezzanine Floor
Scientific Exhibits—Third Floor

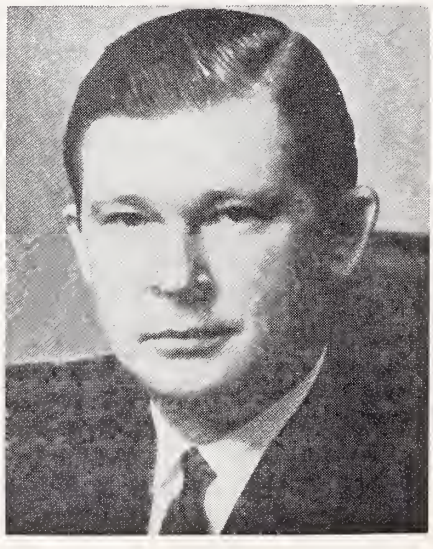
HOURS

Monday, April 27—8 a.m. to 5 p.m.
Tuesday, April 28—8 a.m. to 5 p.m.





Francis L. Land, M.D., Fort Wayne, Indiana (left), is chairman, Commission on Education, American Academy of General Practice; member, AMA Council on Medical Education and Hospitals and Board of Directors, AAGP; past president, Indiana Academy of General Practice. **Harold J. Marshall, White Plains, New York (center),** is president, National Bank of Westchester; member, Board of Regents, Stonier Graduate School of Banking; chairman, Advisory Committee, Westchester County Department of Public Welfare; past president, National Bank Division of the American Bankers Association. **Elmer M. Smith, M.D., Des Moines, Iowa (right),** is medical director, Department of Social Welfare, State of Iowa; member, Commission on Legislation and Public Policy, American Academy of General Practice.

Herman J. Smith, M.D., Des Moines, Iowa (left), private practice, Internal Medicine; Dean's Committee, Veterans Administration Hospital; Dean's Committee, Polk County Broadlawns Hospital; clinical associate professor of medicine, College of Medicine, State University of Iowa, Iowa City. **John G. Tower, Houston, Texas (right),** is United States Senator from Texas; member, Senate Committees on Banking and Currency, Labor and Public Welfare, and Senate Republican Campaign Committee.

Special Meetings and Dinners (Continued)

IOWA RADIOLOGICAL SOCIETY

Colonial Room—Des Moines Club

Social Hour: 6:30 p.m.—Dinner: 7:30 p.m.

Reservations: L. L. Maher, M.D.
1419 Woodland Avenue, Des Moines

IOWA SOCIETY OF ANESTHESIOLOGISTS

Johnny and Kay's Restaurant

Social Hour: 6:30 p.m.—Dinner: 7:30 p.m.
Guest Speaker: Ray T. Parmley, M.D., Wichita, Kansas

Reservations: L. R. Pearlman, M.D.
1051 Fifth Avenue, Des Moines

IOWA SOCIETY OF INTERNAL MEDICINE

Johnny and Kay's Restaurant

Social Hour: 6 p.m.—Dinner: 7 p.m.

Reservations: J. E. Kelsey, M.D.
1308 Pleasant Street, Des Moines

PAST PRESIDENTS' DINNER

Third Floor, Hotel Fort Des Moines—Room 332
Dinner: 7 p.m.

Tuesday, April 28

LEGISLATIVE CONTACT MEN

Des Moines Room—Hotel Savery

Breakfast: 7 a.m.

PRESIDENT'S RECEPTION AND ANNUAL BANQUET

Hotel Fort Des Moines

Reception: 6 p.m.—North Room

Dinner: 7 p.m.—Grand Ballroom

BENEFIT DANCE

"Caduceus Capers"
Grand Ballroom—Hotel Fort Des Moines
8:30 p.m.

Don Hoy's Orchestra
Sponsored by the Woman's Auxiliary for the Benefit of Its Health Education Loan Fund

Meetings of the
HOUSE OF DELEGATES

will be held in the
GRAND BALLROOM
SAVERY HOTEL

Sunday, April 26—9 a.m.
Wednesday, April 29—8 a.m.

All Members of the IMS Are Welcome

The House of Delegates

Open to All Members

First Meeting—Sunday
April 26, 9:00 a.m.

Grand Ballroom
Savery Hotel

Roll Call

Approval of the Minutes of the Meeting held on April 10, 1963

Reports of Officers

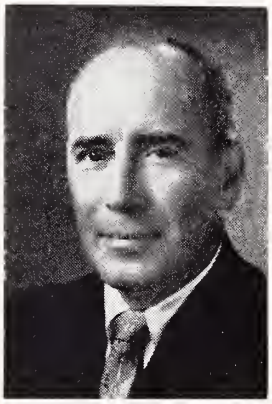
Nominations

Reports of Committee Chairmen

Memorials and Communications

New Business

SPEAKER



L. J. Halpin, M.D.

Second Meeting—Wednesday
April 29, 8:00 a.m.

Grand Ballroom
Savery Hotel

Roll Call

Reading of Minutes

Election of Officers

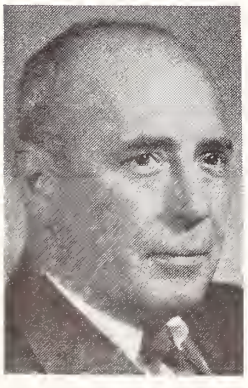
Reports of Committees

Unfinished Business

New Business

Adjournment

Program Committee



L. J. Halpin, M.D.
Chairman



Thomas A. Burcham, Jr., M.D.



James E. Kelsey, M.D.



Guy E. McFarland, Jr., M.D.



Elmer M. Smith, M.D.

LUNCHEON PROGRAMS

Monday, April 27—12 O'Clock Noon

"THE STATE OF THE UNION"

The Honorable John G. Tower, Houston, Texas
United States Senator

Senator Tower will address IMS members in General Session, Grand Ballroom, Hotel Fort Des Moines. A dutch-treat luncheon will be served in conjunction with this program. Details concerning luncheon service will be provided at a later date.

Tuesday, April 28—12 O'Clock Noon

ERSKINE MEMORIAL LECTURE
"PEPTIC ULCER"

Panel Discussion

Presentations on "Peptic Ulcer" will be presented by a panel of five physicians. This program will be presented in General Session, Grand Ballroom, Hotel Fort Des Moines. Arrangements will be made for a dutch-treat luncheon, and details will be provided at a future date.

You Are Cordially Invited to Attend . . .

THE PRESIDENT'S RECEPTION AND ANNUAL BANQUET

Tuesday, April 28–Hotel Fort Des Moines

PRESIDENT'S RECEPTION—6 p.m., North Room
(Blue Shield is arranging the reception in honor of C. V. Edwards, Sr., M.D., IMS President)

ANNUAL BANQUET—7 p.m., Grand Ballroom

Tickets Will Be Sold at the Registration Desk, Hotel Fort Des Moines

Special Entertainment Is Being Arranged for the Enjoyment of Those in Attendance

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"CADUCEUS CAPERS"

Benefit Dance
for the
WOMAN'S AUXILIARY HEALTH EDUCATIONAL LOAN FUND
Don Hoy's Orchestra

8:30-12:00
Tuesday, April 28
Grand Ballroom—Hotel Fort Des Moines

Evening Expense Courtesy of
Standard Medical and Surgical Company

Tickets Will Be Sold at the Registration Desk, Hotel Fort Des Moines

SCIENTIFIC EXHIBITS

Modern Otologic Surgery—James A. Donaldson, M.D., Department of Otolaryngology, State University of Iowa College of Medicine, Iowa City

Medical Education—Robert C. Hardin, M.D., Dean, State University of Iowa College of Medicine, Iowa City

Seven Years' Experience With Tranquilizers—Veronica M. Pennington, M.D., Department of Psychiatry, University of Mississippi School of Medicine, Jackson, Mississippi

"Seek and Ye Shall Find"—Iowa State Department of Health, Division of Venereal Disease Control

Civil Defense Emergency Hospital in Operation—Iowa State Department of Health, Division of Health Mobilization

Immunization—Iowa State Department of Health, Vaccination Assistance Project

Homemaker Service for the Ill and Disabled Patient—Des Moines-Polk County Health Department and Committee on Aging, Polk County Medical Society

Memo to Physicians: Eye Problems in Children—Iowa Society for the Prevention of Blindness

Abnormal Hemoglobin: Newer Concepts of Molecular Disease and Survey of Abnormal Hemoglobin in Des Moines, Iowa—Iowa Society of Medical Technologists and Division of Maternal and Child Health, Iowa State Department of Health; Jack J. Spevak, M.D., Margaret Phillips, M.T. (ASCP), and Donald Davidson

Teaching With Anatomical Drawings—Iowa Society of X-Ray Technicians

Exercises for Low Back Pain—Iowa Chapter, American Physical Therapy Association

Iowa Association of Medical Assistants

Professional Information—Public Education Programs and Materials—American Cancer Society, Iowa Division, Inc.

Chemistry, Chromosomes and Congenital Anomalies—The National Foundation—March of Dimes Polk County Chapter

Arthritis—Research, Diagnosis, and Treatment—Iowa Chapter Arthritis and Rheumatism Foundation

Myasthenia Gravis—Iowa Chapter, Myasthenia Gravis Foundation, Inc.

TECHNICAL EXHIBITORS

Abbott Laboratories, North Chicago, Illinois

Ames Company, Inc., Elkhart, Indiana

Astra Pharmaceutical Products, Inc., Worcester, Massachusetts

Ayerst Laboratories, Chicago, Illinois

Bankers Leasing Company, Des Moines, Iowa

Blue Cross-Blue Shield Plans, Des Moines-Sioux City

Breon Laboratories, Inc., New York, New York

Carnation Company, Los Angeles, California

CIBA Pharmaceutical Company, Summit, New Jersey

Control-O-Fax Sales, Inc., Des Moines, Iowa

Des Moines Flying Service, Des Moines, Iowa

Dictaphone Corporation, New York, New York

Dome Chemicals, Inc., New York, New York

The EMKO Company, St. Louis, Missouri

Endo Laboratories, Inc., Richmond Hill, New York

Fuller Pharmaceutical Company, Minneapolis, Minnesota

Geigy Pharmaceuticals, Yonkers, New York

Hammer X-Ray Corporation, Des Moines, Iowa

Lazy M Shoe Stores, Des Moines, Iowa

Lederle Laboratories, Pearl River, New York

Eli Lilly and Company, Indianapolis, Indiana

J. B. Lippincott Company, Philadelphia, Pennsylvania

Loma Linda Foods, Riverside, California

Mead Johnson Laboratories, Evansville, Indiana

Medco Products Company, Inc., Tulsa, Oklahoma

The Medical Protective Company, Fort Wayne, Indiana

Merck Sharp & Dohme, Chicago, Illinois

The Wm. S. Merrell Company, Cincinnati, Ohio

MID-AMERICAN Medical Supply Company, Sioux City, Iowa

The National Drug Company, Philadelphia, Pennsylvania

Northwestern Bell Telephone Company, Des Moines, Iowa

Ortho Pharmaceutical Corporation, Raritan, New Jersey

Parke, Davis & Company, Detroit, Michigan

Pepsi-Cola Bottlers Association of Iowa, Des Moines, Iowa

Pfizer Laboratories, New York, New York

Physicians and Hospitals Supply Company, Minneapolis, Minnesota

Picker X-Ray, Midwest, Inc., Omaha, Nebraska

Professional Management Midwest, Des Moines, Iowa

The Prouty Company, Des Moines, Iowa

Riker Laboratories, Inc., Northridge, California

Roche Laboratories, Nutley, New Jersey

J. B. Roerig and Company, New York, New York

Sandoz Pharmaceuticals, Hanover, New Jersey

W. B. Saunders Company, Philadelphia, Pennsylvania

Schering Corporation, Union, New Jersey

G. D. Searle & Company, Chicago, Illinois

Seven-Up Bottling Company, Des Moines, Iowa

Siemed, Inc., Hinsdale, Illinois

Smith, Miller & Patch, Inc., New Brunswick, New Jersey

E. R. Squibb & Sons, New York, New York

Standard Medical & Surgical Company, Des Moines, Iowa

Thermo-Fax Dealers of Iowa, Des Moines, Iowa

Thermolyne Corporation, Dubuque, Iowa

Ulmer Pharmacal Company, Minneapolis, Minnesota

The Upjohn Company, Kalamazoo, Michigan

U. S. Vitamin & Pharmaceutical Corporation, New York, New York

Wallace Laboratories, Cranbury, New Jersey

Warner-Chilcott Laboratories, Morris Plains, New Jersey

Warren-Teed Pharmaceuticals, Inc., Columbus, Ohio

Westwood Pharmaceuticals, Buffalo, New York

Winthrop Laboratories, New York, New York

Scientific Articles

Splenectomy for Hypersplenism Secondary to Malignancy

HAL G. BINGHAM, M.D., and
EDGAR S. BRINTNALL, M.D.
Iowa City

Hypersplenism has been defined as an increased activity of the spleen resulting in reduction of one or more of the cellular elements of whole blood. Hypersplenism may be primary or secondary. The effectiveness of splenectomy in the treatment of primary hypersplenism is well established, but the role of splenectomy in secondary hypersplenism is less clear.

In 1929, W. J. Mayo[1] reviewed 500 cases of splenectomy. Fifty-four cases were classified as dyscrasias associated with abnormalities of white blood cells. The primary disease entities consisted of leukemia, lymphocytic splenomegaly and, in one instance, Hodgkin's disease. Mayo stated that splenectomy was considered in these cases because of the splenomegaly, and he observed that any treatment which reduced the size of the spleen seemed to improve the condition of the blood and thereby the condition of the patient. In this group, the patients subjected to splenectomy gained a pronounced and prolonged palliation, but at no time did their "blood" become normal.

A more recent study by Strawitz *et al.*,[2] showed encouraging results in 36 patients who were subjected to splenectomy because of hypersplenism secondary to malignant lymphoma and leukemia. The majority of the patients had been treated with alkalating agents, radiation, cortisone, or combinations of these, and splenectomy was considered after these conservative measures had failed to control hypersplenism. Eighty per cent of their patients had good or moderate hematologic responses to splenectomy, and further therapy could be instituted effectively in the previously refractory patients.

Zollinger, Martin, and Williams[3] found that although splenectomy may prolong life in the patient with secondary hypersplenism or establish a more favorable hematologic state, it did not appreciably alter the eventual outcome of the primary disease. However, many patients who had been considered poor risks had gratifying responses to splenectomy.

Sedgwick and Hume[4] listed a number of complications occurring after splenectomy in secondary hypersplenism, and stated that the results would never be so rewarding as in instances of primary hypersplenism. They did feel, however, that the therapeutic approach should be re-evaluated and that splenectomy might be considered earlier, once secondary hypersplenism had become manifest.

In a series of 62 splenectomies performed at the Veterans Administration Hospital in Iowa City, there have been two cases in which the indications for surgery were hypersplenism secondary to malignancy. One patient had chronic lymphatic leukemia with an intractable anemia, and the other patient had Hodgkin's disease with a thrombocytopenia. In three other cases, splenectomy was carried out for hypersplenism secondary to nonneoplastic disease. The three cases were similar in that they were diagnosed as Felty's syndromes, and all had a neutropenia as their manifestation of hypersplenism (F. G. W. No. A-1258; J. H. L. No. A-3137; J. O. No. A-9386). Three additional splenectomies were performed for primary hyper-

The authors are on the staff of the Surgical Service, Veterans Administration Hospital, Iowa City.

TABLE 1

INDICATIONS FOR SPLENECTOMY

Veterans Administration Hospital, Iowa City, 1952-1961

Hypersplenism	
Primary	3
Secondary to:	
Benign disease	3
Malignant disease	2
Other Indications	
Trauma	6
Infarction	2
Secondary to operation for:	
Benign disease	29
Malignant disease	17
Total	62

splenism; the hematologic manifestation was a pancytopenia in two (E. A. No. 25886 and W. J. D. No. A-8093) and a granulocytopenia in one (C. K. K. No. RA-6408).

In the largest group of patients, splenectomy was an incidental procedure secondary to operations on adjacent diseased structures (Table 1). In 28 patients the primary indication for operation was benign disease, e.g. peptic ulcer, hiatus hernia, pancreatitis, esophageal varices and subphrenic abscess. Malignant disease in adjacent organs such as stomach, colon and pancreas resulted in incidental splenectomy in 16 additional patients. Splenic infarction or laceration secondary to infection, trauma or metastatic disease indicated splenectomy in 10 patients.

CASE REPORT: CHRONIC LYMPHATIC LEUKEMIA, SPLENECTOMY

J. D. (No. RE 19616), a 65-year-old white male, was hospitalized at the Veterans Administration Hospital in Iowa City from December 19, 1954, to September 25, 1955. He complained of weakness and dyspnea of six weeks' duration. There had been anorexia and a 20-pound weight loss. Ten days before admission, he had noticed swelling of the hands and ecchymoses.

Positive physical findings included pallor; cutaneous ecchymoses; striate hemorrhages in the right fundus near the optic disc; the liver edge palpable two inches below the right costal margin; the spleen enlarged to three inches below the left costal margin; and large, firm, discrete non-tender lymph nodes in the cervical, axillary and inguinal regions.

The white blood cell count was 230,000, with 99 per cent lymphocytes. The red blood cell count was 1,890,000; the hemoglobin was 6.0 grams; and the hematocrit measured 19 volumes per cent. The platelet count was 146,000, and the reticulocyte count was 1 per cent. The serum bilirubin was 1.2 mg. per cent, with an indirect component of 1.0 mg. per cent.

A diagnosis of chronic lymphatic leukemia was made. Radiotherapy was given, consisting of nine millicuries of P-32 orally, and 500 roentgens of x-ray over the spleen, 125 roentgens over the inguinal regions and 5,800 roentgens to the cervical regions. In addition he received cortisone, ACTH, hydrocortisone and 53 blood transfusions of 500 cc. each. His peripheral white blood cell count decreased to 30,000 with this therapy, but the anemia persisted, and splenectomy was advised because it was thought that the anemia was due to hypersplenism secondary to the leukemia.

Splenectomy was performed August 3, 1955, eight months after admission. The spleen weighed 1,120 grams, and an accessory spleen was present in the hilar region. Microscopically, the splenic architecture was distorted by masses of mature lymphocytes, and the sinusoids contained large numbers of these cells. Splenic hilar lymph nodes had been completely replaced by these neoplastic cells.

Following splenectomy, anemia was not a problem. The red blood cell count was 3,810,000; the hemoglobin measured 11.4 grams; and the hematocrit was 38 volumes per cent. The platelet count was 82,000, and the reticulocyte count was 0.9 per cent. The serum bilirubin totalled 2.0 mg. per cent, with an indirect component of 1.1 mg. per cent. No additional blood transfusions were required—a circumstance markedly in contrast to that which had existed prior to splenectomy, when 1,000 cc. of transfused blood was required each week. Repeat radiochromium studies by the radioisotope unit revealed marked diminution in the degree of hemolysis in comparison with presplenectomy determinations. The patient was discharged from the hospital one month after splenectomy.

This patient was readmitted to the hospital 4½ months later (December 27, 1955), with chills, fever and joint pain. The white blood cell count varied from 15,000 to 55,000. The hemoglobin measured 14.9 grams, and the hematocrit was 45 volumes per cent. Several blood cultures were positive for E. coli. The bacteremia and sepsis continued despite the administration of appropriate antibiotics and reduction of steriod dosage, and the patient finally died on May 28, 1956, ten months following splenectomy.

CASE REPORT: HODGKIN'S DISEASE, SPLENECTOMY

R. H. (No. A 7294), a white male of 23 years, was admitted to the Veterans Administration Hospital in Iowa City for the first time in December, 1960. In June, 1959, he had been treated with 2,000 roentgens of x-ray to a left cervical mass which had been biopsied and diagnosed as Hodgkin's disease at Tripler U. S. Army Hospital. In December, 1959, nodularity in the right cervical region

was treated with 1,800 roentgens of x-ray, with regression. In June, 1960, he developed petechiae and bleeding from the gums. In July, 1960, he was hospitalized at the Great Lakes Naval Hospital and was started on Meticorten. The initial platelet count was 20,000. In October, 1960, the platelets numbered 142,000. The admission white blood cell count in December, 1960, was 4,950, with 71 per cent neutrophils and 29 per cent lymphocytes. Platelets numbered 60,000, and the hemoglobin measured 13.9 grams. The bone marrow was not diagnostic. He was discharged on prednisone, 15 mg. daily in divided doses.

This patient was readmitted to the hospital July 3, 1961, complaining of bleeding gums and cutaneous ecchymoses of two weeks' duration.

Positive physical findings included steroid facies, hypertrophic and bleeding gums, numerous ecchymoses of the skin of the trunk and extremities, and a moderately enlarged spleen which was palpable two inches below the costal margin.

The white blood cell count was 6,400, with 78 per cent neutrophils, 6 per cent bands, 13 per cent lymphocytes and 4 per cent monocytes. The platelet count was 12,000, and the hemoglobin measured 10.7 grams. The total bilirubin was 0.3 mg. per cent, and the Coombs' test was negative. The Bromsulphthalein test revealed only 2 per cent retention. Bone marrow aspirate revealed an M/E ratio of 2.5/1.0, and the megakaryocytes were normal in number and appearance. The chest roentgenogram was normal.

Despite increases in the prednisone from 15 to 40 mg. and then to 60 mg. daily, the oozing of blood from the gums continued, and the platelet count remained low. A diagnosis of hypersplenism, manifested by thrombocytopenia secondary to Hodgkin's disease, was made, and splenectomy was recommended.

Preoperatively, the prednisone dosage was increased, and two 500 cc. freshly drawn, whole-blood transfusions were given. At the time of splenectomy, on July 15, 1961, the spleen was found to be about 2½ times normal size (390 Gm.). Grossly it was congested, revealing areas of neoplastic infiltrate, and the splenic hilar lymph nodes were large and grossly neoplastic. Microscopically, the splenic tissue was typical of Hodgkin's disease, revealing Reed-Sternberg giant cells as well as lymphocytes and eosinophils. Focal areas of necrosis were present.

This patient's postoperative course was uncomplicated. The hemoglobin increased to 13.4 grams, and the platelets increased to 50,000 by the second postoperative day and to 160,000 by the fourth day. Bleeding from the gums ceased, and no new ecchymoses appeared. The prednisone was gradually decreased and then discontinued. He was discharged July 28, 1961.

The patient was followed periodically after his discharge, and at the last examination, two years postoperatively, he felt well and was working with good strength and stamina. His weight was maintained. During this interval he had tolerated an appendectomy for appendicitis and a urinary tract infection without sequelae. He had received a course of Cytoxin therapy one year postoperatively. At the last physical examination, the liver was not palpable, but there were enlarged lymph nodes in the axillae. Radiation therapy was given. The hemoglobin was 10.1 mg. per cent, and the hematocrit was 35 volumes per cent. A white blood cell count showed 9,000/cu. mm., with 65 per cent neutrophils. The last platelet count, one and one-half years after splenectomy, was 422,000/cu. mm.

DISCUSSION

The indications for splenectomy have been broadened in the past few years to encompass some varieties of secondary hypersplenism. Although the role of palliative surgery has been well-established for some diseases, there arises the question of advisability of operation in the patient with far-advanced malignancy if there are significant incidences of operative mortality and postoperative complications. It is not always easy to make the diagnosis of secondary hypersplenism, for the spleen is not always palpable, and the bone marrow may be normal or nearly normal. This problem was evident in four cases presented by Howard and Hasl,[5] in which the diagnosis was confirmed only after splenectomy.

The problem may be resolved by a consideration of the advantages of splenectomy in this type of patient. In the majority of patients with malignancy and secondary hypersplenism, a favorable hematologic response is to be expected after splenectomy. This occurs in patients in whom no previous attempts have been made to control the hypersplenism, and in patients who have had previous treatment with alkalating agents, radiation or cortisone, or a combination of these. Further, those patients who have had favorable hematologic responses are more easily managed following splenectomy, and although the underlying primary disease process remains unchanged, the survival time may be prolonged.

This has proved to be the case in two patients who were operated upon at the Veterans Administration Hospital in Iowa City for hypersplenism secondary to malignancy. Both of these patients had good hematologic responses following splenectomy, and their subsequent management was facilitated. It is not possible to determine a prolongation of survival time, for the first patient died of septicemia 10 months after operation, and the second patient is still alive and well two years post-splenectomy.

SUMMARY

Hypersplenism was the indication for operation in eight of 62 splenectomies performed during the nine-year period 1952-1961. In two patients with

hypersplenism secondary to malignancy, favorable hematologic responses were obtained; specifically, a previously refractive anemia was corrected in one patient, and a thrombocytopenia was corrected in the other patient. Splenectomy proved an effective palliative procedure in these patients with malignancy and secondary hypersplenism.

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Idiopathic Hypoparathyroidism

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TETANY TEACHES A LESSON. A consideration of its causes may bring to light an unusual disease amenable to specific therapy, or an illness with multiple system involvements that may occasion considerable difficulty in diagnosis. As one of the causes of tetany, hypoparathyroidism can be a great teacher in all these respects.

Three separate disease entities have the characteristic clinical symptoms of hypoparathyroidism. These are post-thyroidectomy hypoparathyroidism, idiopathic hypoparathyroidism and pseudo-hypoparathyroidism. We have recently seen a young lady presenting the findings of idiopathic hypoparathyroidism.

CASE REPORT

A 22-year-old white housewife was admitted to Mercy Hospital, Cedar Rapids, on February 2, 1961, with the complaint of spasm of the fingers. For several weeks she had complained of lightheaded episodes, accompanied by dryness of the mouth and tremor of the hands. Diplopia had been noted on the day before her admission. At times her fellow workers had observed that her eyelids were twitching. She experienced dysesthesias of the face, and it seemed to her that microorganisms were crawling in her skin and in her stomach. At times her feet felt heavy as she walked. She had episodes of difficulty in getting a full breath, and when she tried to speak she had trouble in moving her jaws. She had marked flexor spasms of the fingers when she did some writing, and spontaneous flexor and adductor spasms of the fingers and wrists occurred in her left hand and arm. Three days before her admission, she had had an acute episode of vomiting and diarrhea which had resulted in an intensification of all her symptoms. The diarrhea had ceased the following day.

Her previous health had been excellent. A normal pregnancy and delivery had occurred in 1957. In retrospect, she thought she had noted mild tetany and dysesthesias for the first time in August, 1960. Menstrual periods were normal; there was no history of injury or surgical procedures to the neck.

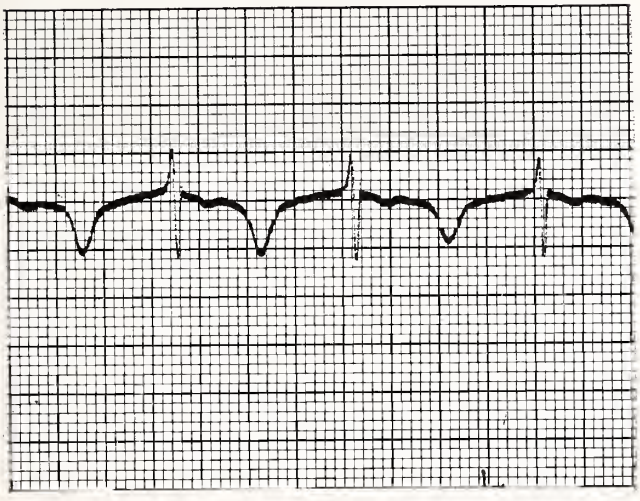
Examination revealed normal growth and development, bilateral papilledema of 2 diopters, and Chvostek and Trousseau signs. Hyperventilation produced bilateral flexor and adductor spasms of the fingers and wrists, more marked on the left. The pupils, lenses, deep reflexes and sensory tests were all normal. The Babinski sign was not elicited. Blood pressure was 112/78 mm. Hg.

Laboratory studies revealed normal peripheral blood, sedimentation rate and urinalysis. The urine concentration test showed a specific gravity of 1.022. Repeated Sulkowitch tests on the urine showed a very faint precipitation.

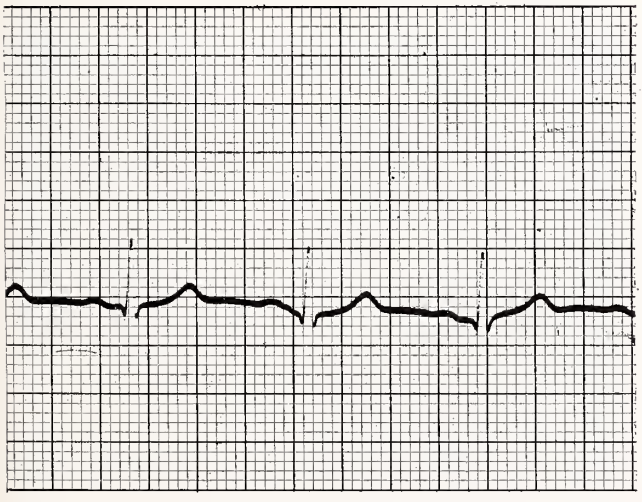
Values for serum calcium ranged from 5.2 to 6 mg. per cent, and for serum phosphorus from 8.4 to 9.0 mg. per cent. With the patient on a normal hospital diet, the 24-hour calcium excretion in the urine ranged from 33 to 42 mg., as compared with a normal of 55 to 200 mg. Total serum proteins were 6.15 grams, with serum albumin 4.15 grams and serum globulin 2.0 grams. The BUN was 14 mg. per cent. Serum sodium, potassium, chloride and CO_2 combining power were normal. The serum alkaline phosphatase was 0.6 units.



Figure 1. Thickening of the lamina dura.



Feb. 10, 1961. QT 0.52 sec. (Normal 0.352 sec.) Ca 5.32. mg. per cent; P 8.6 mg. per cent.



May 2, 1961. QT 0.33 sec. (Normal 0.33 sec.) Ca 11.4 mg. per cent; P 5.1 mg. per cent.

Figure 2. Electrocardiograms showing prolonged QT interval, with return to normal following treatment.

Spinal-fluid examination showed an opening pressure of 380 mm. and a closing pressure of 270 mm. H_2O. The fluid was clear, and the VDRL was non-reactive. The protein was 20 mg. per cent, and there were 3 leukocytes and 3 lymphocytes per cubic millimeter.

X-rays of the teeth showed a markedly thickened lamina dura (Figure 1). A chest x-ray and a complete bone survey were normal. The electrocardiogram revealed a corrected QT interval of 0.52 seconds. The normal value is 0.352 seconds (Figure 2).

The Ellsworth-Howard test (Table 1) showed a fourfold phosphate diuresis on February 16, 1961. The test was repeated on April 27, 1963, using intramuscular parathyroid hormone and a different preparation, and a greater phosphate diuresis was obtained. Additional laboratory evidence thus ruled out pseudo-hypoparathyroidism.

The diagnosis of idiopathic hypoparathyroidism was established on the basis of low serum calcium, high serum inorganic phosphorus, tetany, the absence of trauma or a history of surgical procedure in the parathyroid region, and the absence of other causes of hypocalcemia such as the malabsorption syndrome, renal tubular acidosis, nutritional deficiency of Vitamin D, and renal insufficiency. The normal bone survey excluded infantile rickets and adult osteomalacia. A thickened lamina dura may be present in hypoparathyroidism regardless of cause.

Pseudo-hypoparathyroidism presents all the biochemical findings of idiopathic hypoparathyroidism or post-thyroidectomy hypoparathyroidism. Pseudo-hypoparathyroidism, however, presents peculiar somatic anomalies.[10] The patient usually has a moon face and often carries a perpetual smile. A remarkable dyschondroplasia of the metacarpals and metatarsals causes early closure of the epiphyseal discs and leads to the shortening of one or more digits, usually in the first metacarpal and less often in the

TABLE 1

ELLSWORTH-HOWARD TEST SHOWING HOURLY TOTAL URINE PHOSPHATE EXCRETION BEFORE AND AFTER PARENTERAL PARATHYROID EXTRACT, IN MILLIGRAMS

2-16-61	4-27-63
1. 17.2	54 (6 hrs.)
2. 18.6	11.2
3. 19.2	10.9
500 mg. Parathyroid hormone I.V.	300 mg. Parathyroid hormone I.M.
4. 79.8	50.5
5. 70.2	92.0
6. 39.5	100.0
7. 32.4	37.0
8. 28.3	39.9
Serum Ca 5.2 mg.% Serum P 8.4 mg.%	Serum Ca 7.0 mg.% Serum P 5.7 mg.%

second metacarpal. Subcutaneous foci of ectopic bone formation frequently occur. The patient presented none of these findings.

In pseudo-hypoparathyroidism it is thought that a normal amount of parathyroid hormone is produced, but that because of a failure of end-organ response in the renal tubules, the urinary excretion of phosphorus is diminished. As a result, serum phosphorus rises, serum calcium diminishes and the characteristic symptoms of tetany develop. In pseudo-hypoparathyroidism, parenteral parathyroid hormone produces up to twofold phosphate diuresis, whereas the response in the normal person is fourfold, and the patient with idiopathic hypoparathyroidism experiences up to a tenfold phosphate diuresis. Because of variations in potency of the various parathyroid hormone extracts, one may have to repeat the test at varying dose levels to obtain a maximal phosphate diuresis in the test patient. The absence of the physical characteristics of pseudo-hypoparathyroidism, together with the more than twofold phosphate diuresis, eliminated the diagnosis of pseudo-hypoparathyroidism in this young woman.

After the patient was treated with vitamin D and calcium lactate orally, she became symptom free, and the papilledema disappeared. The serum calcium on May 2, 1961, was 11.4 mg. per cent, and the serum phosphorus 5.1 mg. per cent. The QT interval of the EKG returned to normal. She became pregnant in the fall of 1962, and a normal delivery of a healthy male infant occurred in April, 1963. She was symptom-free during the pregnancy, and her serum calcium at onset of labor was 8.6 mg. per cent and her phosphorus was 4.0 mg. per cent. A transient bout of tetany occurred in September, 1962, during a 48-hour episode of acute infectious diarrhea.

CHARACTERISTIC FINDINGS

Our patient presented the clinical and laboratory features of idiopathic hypoparathyroidism. The symptoms, in order of decreasing frequency as reviewed by Steinberg and Waldron,[3] were tetany, convulsions, tetanic equivalents (paresthesias, numbness, cramps and laryngeal stridor without carpal pedal spasm), gastrointestinal disturbances of constipation, nausea and vomiting, psychoses, nervousness and photophobia. Physical signs include cataracts, poor dentition, sparse hair, dry skin and brittle nails, papilledema, fungus infections, mental retardation and generalized physical retardation, and occasionally exfoliative dermatitis.

Tetany is the most common manifestation and occurs in 64-78 per cent of patients. In addition to classical tetanus, the disease has presented as torticollis, laryngeal stridor and asthma.

Of special interest are the neurologic manifestations. Patient after patient is reported with neurologic symptoms, and frequently the correct diagnosis has not been established for years. Generalized convulsions occur in 52-70 per cent of patients. Truesch[4] reported a patient with a 20-year history of treatment for epilepsy in whom the final and correct diagnosis was idiopathic hypoparathyroidism. Harrison[9] reported five patients in whom the presenting symptom was a generalized seizure; tetany occurred in only one patient.

McKinney[5] recently reviewed the patients with idiopathic hypoparathyroidism with the presenting symptom of disorder of movement. He summarized the data on 17 patients with abnormal involuntary movements and one with masked facies whose cases had been reported in the literature, and presented five additional patients of his own. The abnormalities of movement included chorea, oculogyric crises, "flinging movements," paralysis agitans, coarse twitchings and athetosis.

The presence of convulsions with papilledema may simulate brain tumor. The papilledema is thought due to increased intracranial pressure, and represents a true papilledema rather than a papillitis. The spinal fluid pressure is invariably elevated. The pathologic mechanisms are unknown.

Other central nervous system findings include psychoses, EEG abnormalities, and intracerebral calcification. The calcification is seen as bilateral symmetrical collections of fine to heavy densities in the area of the basal ganglia. The calcium is located in the adventitia and media of capillaries, smaller arteries and veins of the caudate nucleus and globus pallidus. The causes are unknown. No correlation exists between the clinical picture and the degree of calcification, and regression does not occur during therapy.

Additional clinical findings are cataracts in 50 per cent of patients, and ectodermal dysplasia (dry rough skin, sparse and brittle nails) in 25 per cent. The QT interval of the electrocardiogram is frequently prolonged. Moniliasis, steatorrhea, adrenal insufficiency, and macrocytic anemia may coexist.

The incidence of idiopathic hypoparathyroidism is unknown. About 150 cases have been reported. In the period 1935-1950, the Queens General Hospital had 213,025 admissions,[3] but the diagnosis of idiopathic hypoparathyroidism was made only once. Buckwalter[6] reported one patient with idiopathic hypoparathyroidism and one patient with pseudo-hypoparathyroidism in the period 1927-1955 at the State University of Iowa Hospitals. The disease is predominantly a pediatric one. In one review of 49 patients, 34 had the onset at age 16 years or earlier.

Pathologic material is meager. Kopin and Rosenberg[7] reviewed seven patients and reported one of their own. In five patients, no parathyroid glands were found at autopsy. Fatty replacement of the glands was noted in another. Bits of atrophic tissue were found in one patient. Kopin's patient had one completely normal parathyroid gland. In four patients, bilateral adrenal cortical atrophy was

present, and in one patient there was an increase in pituitary basophils.

TREATMENT

Prognosis in general is good in the well-treated patient, and female patients with adequate management tolerate pregnancy well.

Specific therapy is available for this disease. The object is to maintain normal serum calcium and phosphorus values to prevent the effects of the hypocalcemic state and to avoid metastatic calcification due to hypercalcemia. The treatment of choice is dihydrotachysterol, with or without calcium. Concentrated vitamin D with calcium is effective and costs less. At times it may be necessary to reduce phosphorus absorption from the bowel through the use of aluminum hydroxide gel. A diet low in phosphorus is indicated. Parathyroid hormone is impractical because of its expense and inconvenience, and the development of resistance to its action. In the emergency state of acute tetany, intravenous calcium is the specific treatment. Parathyroid transplants have proved unsatisfactory for long-term management.

The efficacy of therapy must be determined frequently by means of serum calcium and phosphorus determinations. The Sulkowitch test for urinary calcium hasn't provided satisfactory information for the maintenance of proper serum calcium and phosphorus levels. Litvak[8] *et al.* have demonstrated hypocalcemic hypercalciuria in five patients treated with vitamin D. They postulate that vitamin D may reduce the renal tubular resorption of calcium.

PATIENTS IN WHOM THE DISEASE SHOULD BE SUSPECTED

Increased awareness of idiopathic hypoparathyroidism is evidenced by the greater number of case reports during the last 10 years. The group of patients in whom this disease is most likely to be found will be those with convulsive disorders, psychoses or extrapyramidal dyskinesias, and the brain tumor suspects with papilledema. Consideration should be given to the possibility of the disease in patients displaying the hyperventilation syndrome. A patient with chronic adrenal insufficiency, moniliasis, macrocytic anemia, or steatorrhea may prove to have coexisting idiopathic hypoparathyroidism. Since three-fourths of the patients had an onset of symptoms in childhood, the diagnosis must be considered in the patient with infantile convulsions and in the young patient with cataracts. The availability of specific therapy is an added incentive for making the diagnosis.

SUMMARY

An additional case report of idiopathic hypoparathyroidism has been presented.

Prompt diagnosis is facilitated by the characteristic clinical and laboratory findings.

Recognition of the disorder is of utmost importance, since specific therapy is available.

The authors gratefully acknowledge the assistance of Sister M. Mercedes and her staff, who performed the laboratory determinations at Mercy Hospital.

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The IMS Nominating Committee will meet at the Society's headquarters, in Des Moines, at 1:30 p.m. on Sunday, March 22, 1964.

All IMS members will be welcome, except when the Committee has gone into executive session.

A Staphylococcal Epidemic in a Newborn Nursery

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JAMES F. SPEERS, M.D., M.P.H.

STAPHYLOCOCCAL INFECTION in newborn infants is a well recognized problem that not infrequently confronts the practicing physician. While managing the individual case, the physician should consider possible sources for the infection, for the isolated case he sees may be only one of a number of cases in infants who have received their initial care in the same hospital nursery. All too often, communication between the individual physicians, hospital authorities, and local health officials is such that there may be considerable delay before a nursery epidemic is recognized.

Staphylococcal epidemics in newborn nurseries were described as far back as 1889; however, a clear definition and understanding of the problem did not come until the advent of phage typing which has permitted the precise identification of the various strains of the offending organism.[1, 2] It is now recognized that hospital maternity-newborn services are a most fertile field for the occurrence of serious epidemics of staphylococcal infections.

The present report describes an epidemic which occurred in the newborn nursery of a small maternity hospital. The long latent period before the development of clinical manifestations of staphylococcal infection, plus, in this outbreak, the placement of the infants by various adoption agencies in homes throughout the State of Iowa, illustrates graphically how difficult it can be to establish the existence of an epidemic. Epidemiologic methods used to identify the source and to trace the spread of the infection, as well as to determine control measures, will be presented.

Dr. Connor is assistant director and Dr. Speers is director of the Des Moines-Polk County Health Department, and Dr. Mosley is epidemic intelligence service officer, Kansas City Field Station, U. S. Public Health Service.

THE HOSPITAL

The epidemic occurred in a small maternity hospital where patients are treated prenatally in residence. These young women earn part of their keep by working in the community or at the hospital, as long as their physical condition permits. The maternity department is on one floor, separate from the residential and clinic areas. There is a labor and delivery suite, a postpartum ward, and three nurseries. The main nursery serves infants who will be placed for adoption. These babies have no contact with the mothers and are discharged directly to placement agencies. A second nursery is used for observation of infants suspected of having an infectious disease. The third nursery is for infants (approximately 25 per cent of the deliveries) who are being discharged to their mothers. The expectant mothers are admitted to the maternity department when in labor, and are discharged 10 days postpartum. The hospital is a relatively small operation, averaging 10 to 14 deliveries per month. Only normal pregnancies and deliveries are cared for there. If complications are anticipated or if they develop, the patient is transferred to a general hospital. Only well, full-term infants are kept in the nursery; others are transferred to a general hospital.

At the time of the outbreak, the staff of the maternity department consisted of 6 nurses and 2 aides. Five of the nurses had worked at the hospital for periods ranging from 18 months to 10 years. The sixth nurse was hired on June 16, 1962, and took over duties of the head nurse who went on vacation from June 27 to July 23, 1962. The nurses are responsible for following the progress of labor, assisting at the delivery, and administering immediate and later postpartum care, as well as caring for the newborn. Physician coverage is provided part-time by private doctors and by a rotating intern from a local hospital.

THE EPIDEMIC

The first indication of the outbreak came on July 20, 1962, when the Health Department was notified by a local physician that within the past three days he had hospitalized one infant with a staphylococcal mandibular abscess, and had then

treated another infant for impetigo, presumably staphylococcal. He noted that both of these infants had been born on the same day (July 4, 1962) in the hospital described above, and he suspected that the infections had been hospital-acquired. Following this report, cultures were collected from these two infants for identification of the organism. Since phage typing was not readily available, the antibiotic sensitivity pattern was determined for use as an index in identifying the strain involved.

The following day (July 21) a survey of the newborn nursery revealed that two of five infants had a few minute pustular skin lesions. With the finding of these two additional infected infants, it was apparent that an outbreak was in progress. Therefore, efforts were made through the adoption agencies to find all infants born in the preceding six weeks, and to determine the duration and extent of the epidemic. This survey revealed that clinical staphylococcal infection requiring medical care had developed in the eight infants born consecutively between July 4 and July 14, 1962. These infections ranged from multiple cutaneous pustules, conjunctivitis and mastitis, to deep mandibular abscess and brain abscess. Three of these infants had required hospitalization. Except the two cases cared for by the reporting physician, each of the infected infants was under the care of a different physician in a different part of the State of Iowa, and except for the local doctor, the physicians were unaware that their cases were parts of a major nursery epidemic.

Figure 1 illustrates the period when the infants

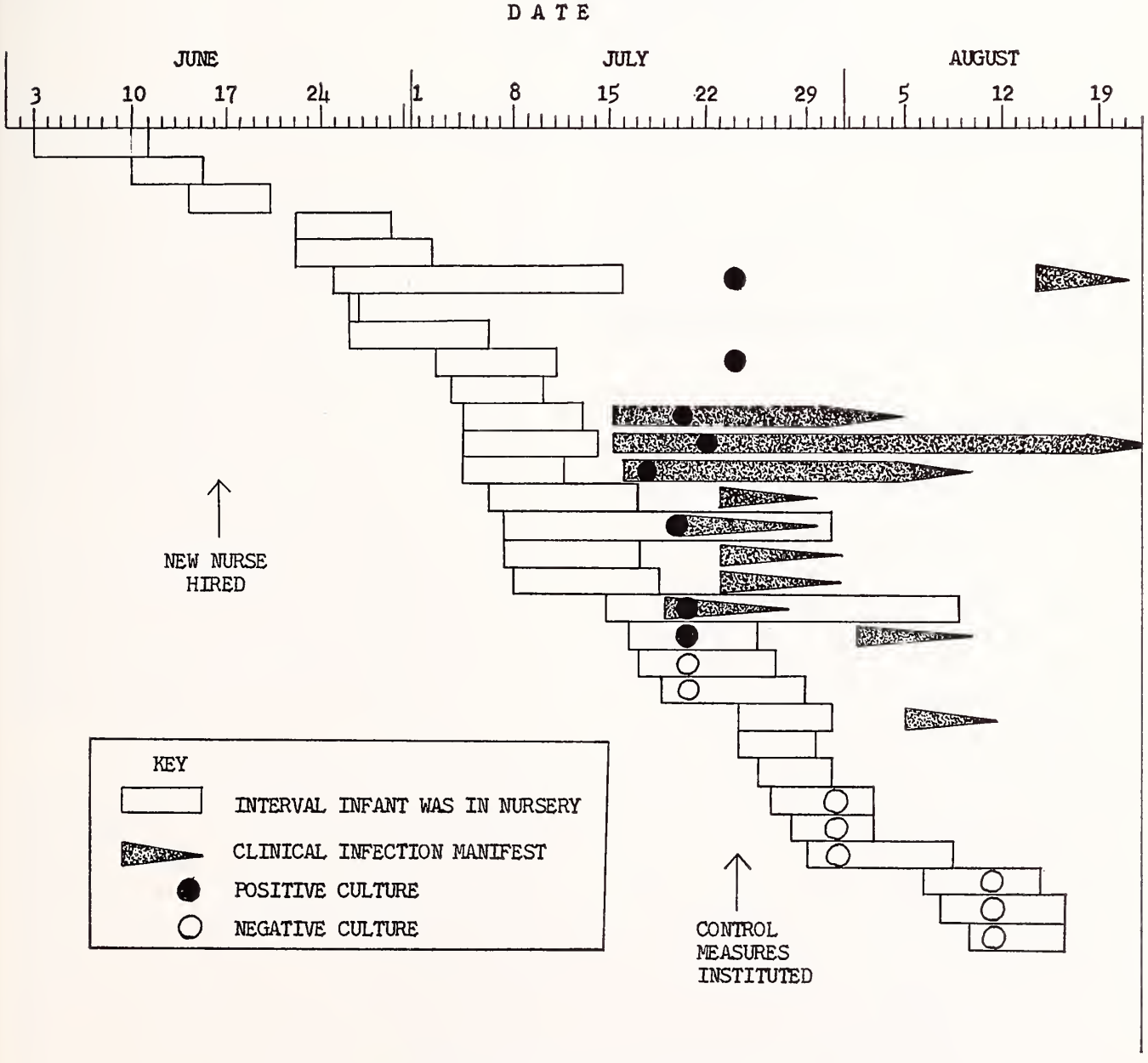


Figure 1. Schematic representation of nursery staphylococcal epidemic.

were in the nursery, and the time when clinical infection became evident. With one exception, all the infected infants were born between July 3 and July 16. This one exception was an infant born on June 25; however, she remained in the nursery until July 16. Further, except for two cases, all other infants did not manifest clinical illness until after discharge from the nursery.

The antibiotic sensitivity patterns of the coagulase-positive staphylococci isolated in the two cases reported initially were identical, and were considered distinctive enough to be used as a marker for identifying the epidemic strain. Accordingly, nasal cultures were taken from all personnel having access to the nursery. Also, multiple environmental cultures were taken from the delivery suite and nursery. Among the 11 individuals cultured, only three were carrying coagulase-positive staphylococci, and none of the environmental cultures yielded coagulase-positive staphylococci. As indicated in Table 1, only Nurse A carried a coagulase-positive staphylococcus with an antibiotic pattern identical to that of the infected infants. Subsequent phage studies (performed by the Iowa State Hygienic Laboratory) revealed that this nurse and eight of the infected infants all had non-typable staphylococci, whereas the other two nurses had typable strains (Table 1).

Nurse A was the new nurse who had been hired on June 16, two weeks before the outbreak began. Although it could not be established that this nurse had introduced the infecting organism into the nursery, her role in disseminating the infection was suggested by the fact that she had been relieved of nursing duties in the past because of inability to perform her work competently, and she had not had nursery experience in recent years. Follow-up revealed that she had been a persistent asymptomatic nasal carrier for over eight weeks. Subsequently, her nasal cultures became negative after a course of systemic chloramphenicol.

TABLE 1

ANTIBIOTIC SENSITIVITY PATTERN AND PHAGE TYPE OF COAGULASE-POSITIVE STAPHYLOCOCCI ISOLATED FROM TWO INFECTED INFANTS AND THREE WARD PERSONNEL*

	Infants		Personnel		
Antibiotic	Case 1	Case 2	Nurse A	Nurse B	Nurse C
Penicillin	R	R	R	R	R
Streptomycin	R	R	R	S	S
Erythromycin	R	R	R	S	S
Chloramphenicol	S	S	S	S	S
Terramycin	R	R	R	S	S
Tetracycline	R	R	R	S	S
Triple Sulfa	R	R	R	R	R
Novobiocin	S	S	S	S	S
Neomycin	S	S	S	S	S
Kanamycin	S	S	S	S	S
Prostaphlin	S	S	S	S	S
Staphcillin	S	S	S	S	S
Phage Type	NT	NT	NT	6/54/47	6/83A

*Sensitivity determined by the disc method.
R = resistant
S = sensitive
NT = Non-typable by routine test dilution and concentrated phage.

Control measures consisted of (1) relieving the nurse-carrier from duty, (2) closing the nursery to new admissions, (3) reviewing proper nursing procedures with the personnel, and (4) complete cleaning and remodeling of the nursery after all exposed infants had been discharged. No further cases developed following these measures, and cultures of all infants born during the following six weeks were negative for coagulase-positive staphylococci.

DISCUSSION

The first step in controlling nursery outbreaks of staphylococcal infections is recognizing that an epidemic exists. This is a particular problem because of the long latent period which may occur between the exposure to infection in the hospital nursery and the development of clinical disease. Thus, recognition of the epidemic often depends upon the alertness of the practicing physician. He should immediately suspect nursery-acquired infection in any infant who has a staphylococcal infection under the age of six months, or in any nursing mother who develops a breast abscess.[3]

When infections in infants are reported, it is necessary to identify the strains of staphylococcus involved in order to determine whether a single strain is involved, indicating a single source such as a nursery. The antibiotic sensitivity pattern, as determined by the disc method, is available in most hospitals, and as in this epidemic, it may be a useful guide in pointing to the identity of similar strains of staphylococci isolated.[3, 4] Confirmation by phage typing should be carried out, for this is a more specific method of labeling strains and may reveal the organism to be one of the more common "epidemic strains."[2]

It has been well established that the infant is far more likely to acquire his first resident strain of staphylococcus from the nursery attendants, than from his mother.[5] Though clinically infected personnel may be responsible for an epidemic, more frequently the asymptomatic nasal carrier has been implicated.[4, 6] Thus, when an epidemic has been established, it is mandatory to culture all personnel to identify any carriers of the epidemic strain. All carriers thus identified should be removed from the nursery until culturing has demonstrated the carrier state to have ceased. Experience has shown that in general, the carrier

must be removed from the nursery before sanitary measures can control the outbreak.[3]

In the epidemic described, a single carrier of a virulent staphylococcus who used poor technic was responsible for the outbreak. It should be recognized, however, that more than one carrier may be found, and that the infection may be disseminated by competent personnel using acceptable technics. Not all the factors involved in making some persons "dangerous" carriers have been defined.[4, 6]

Nursery staphylococcal outbreaks can occur in any institution. Present knowledge and epidemiologic tools can effectively bring an epidemic under control, but the most important step—recognizing that an outbreak exists—is up to the practicing physician.

SUMMARY

A staphylococcal epidemic in the newborn nursery of a small maternity hospital has been described, and the epidemiologic methods utilized to trace the source of the infection and to establish control measures have been presented. This outbreak illustrated the problem of recognizing that a nursery epidemic is in progress. The long latent period between exposure to the organism and the development of clinical disease, plus the placement of the newborn infants in homes throughout the State of Iowa by adoption agencies, caused the majority of the physicians who treated the infections to be unaware that their cases were parts of a major nursery outbreak. The physician's duty to consider the possibility that infection in a newborn infant may have been hospital-acquired has been emphasized.

ACKNOWLEDGEMENT

We wish to acknowledge the assistance of Madelene M. Donnelly, M.D., M.P.H., director of the Division of Maternal and Child Health, Iowa State Department of Health; John W. Green, Jr., M.D., chief pathologist, Iowa Methodist Hospital; and Brigadier Margaret Norris, administrator, Booth Memorial Hospital.

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In Memoriam

CHARLES B. TAYLOR, M.D.
1867-1963

Dr. Charles B. Taylor, formerly of Ottumwa but since 1935 a resident of Upland and Claremont, California, president of the Iowa Medical Society in 1933-34, died last May 25 in Claremont at the age of 95. Although retired from active practice for almost thirty years, Dr. Taylor returned to Iowa for the annual meeting of the society nearly every spring, attending the past presidents' dinner, renewing old friendships and making new ones, for he was the sort of man who "adopted" you if he liked you.



Born in Mahaska County, Dr. Taylor practiced general medicine and surgery in Gibson and What Cheer, Iowa, and then in 1919, after service in World War I, he moved to Ottumwa and limited his work to diseases of the ear, nose and throat. He was active in many medical organizations in southeast Iowa, and as president of the State Society, he probably traveled more miles than any president before or since. Often accompanied by Dr. Robert L. Parker, then secretary, he visited every district of the state, explaining the functions of the State Society, answering questions, but mainly becoming better acquainted with his fellow physicians.

A big man physically, Dr. Taylor was big also in the warmth of his friendships, in his joy of living, and in his dedication to the practice of medicine. With an ever present twinkle in his eye and a big booming laugh, he had a patient in better spirits within minutes of seeing him. He genuinely liked people and was always the center of a group.

He practiced medicine in an era when education rather than socioeconomics was the chief problem and he was very active in furtherance of the Society's Speakers Bureau which took postgraduate education within an hour's drive of every physician in the state once a year. After retirement, he did not relinquish his interest in the problems confronting medical practice but joined the county medical society where he lived, attended staff meetings at the hospital, and aided civil defense in his area during World War II. He remained alert mentally, but as the years passed, he failed physically and was hospitalized at the time of his death.

Two of his three sons became doctors of medicine—Laurence in Ottumwa and Merle in Portland, while the third, Richard, is an official in the California fruit growers' association. Mrs. Taylor and Laurence preceded him in death.

To many people, the world is richer because they knew him and enjoyed his friendship.

—*Mary McCord*

Organic-Phosphate Intoxication

JOHN P. LONG, Ph.D., and
R. A. ATKINSON, M.D.
Iowa City

As the western corn rootworm becomes more prevalent in Iowa, the use of soil insecticides will increase rapidly. Compounds for this purpose, usually referred to as organic phosphates, haven't previously been used to any great extent in this state. Many different chemicals belong to this class, but the commonest ones are TEPP, Parathion, EPH, OMPA, Systox, Chlorothion, Malathion and Diazinon. All of them are very toxic, and the estimated fatal dose for an adult varies from 50 mg. to 1 Gm.

These substances are used in agriculture for the control of soft-bodied insects. Formulations containing from less than one to more than 95 per cent of pure material are commonly available. TEPP and Malathion concentrates are available to the general public.

All of these compounds are potent inhibitors of cholinesterase. Pseudocholinesterase is the most sensitive, but acetylcholinesterase (the type found at all sites of cholinergic transmission) is also susceptible to inhibition. Since cholinesterase serves to hydrolize and hence to inactivate acetylcholine, exposure to any of these insecticides will allow the accumulation of large amounts of acetylcholine. The accumulation of acetylcholine will produce (1) a marked increase in postganglionic parasympathetic nervous activity characterized by cardiac slowing, constriction of bronchial muscles, intestinal muscle stimulation, excessive stimulation of the salivary, sweat and tear glands, marked miosis and contraction of the urinary bladder; (2) greatly increased nerve transmission from motor nerves to skeletal muscle (the accumulation of acetylcholine producing persistent depolarization that will at first produce tremors and then a blockade of nerve transmission); and (3) central nervous system stimulation followed by depression. Impairment of the respiratory centers will contribute to the respiratory depression.

Recent news stories in Iowa dailies have reported that organic-phosphate insecticides will be widely used for treating seed corn this spring to combat root worm. These agents are highly poisonous—even through the farmer's skin—and the label on the container cautions the purchaser to alert his physician before using the material.

This article and the one which immediately follows it are intended to prepare doctors who may have to treat patients with organic-phosphate poisoning during the coming weeks.

CLINICAL FINDINGS

Poisoning may result from inhalation, ingestion or absorption of insecticide through the skin. The symptoms vary somewhat with the size of the dose and the rate of absorption. Visual disturbances include a sensation of pressure in the eyes, blurring of vision or double vision. Respiratory symptoms that often follow inhalation include wheezing, pain in the chest and dyspnea. Gastrointestinal symptoms may be very prominent, and include abdominal pain and cramping, nausea, vomiting, diarrhea and involuntary defecation. Following large doses, the central nervous system may be involved. Anxiety, confusion, insomnia, hallucinations and, eventually, unconsciousness may result. The cardiovascular system may be affected. Bradycardia and hypotension may occur in severe cases.

Physical examination usually reveals small pupils (though with anoxia the pupils may dilate), pallor of the face, sweating of the skin, involuntary defecation or micturition, cyanosis, pulmonary edema, convlusions and coma. Death results from respiratory paralysis.

LABORATORY FINDINGS

The only meaningful test is the measurement of plasma or red-cell cholinesterase activity. Usually, unless the enzyme activity is depressed by more than 40 per cent, there will be no symptoms. An individual who expects to be exposed to these insecticides should have his cholinesterase activity checked initially and afterward (or at weekly in-

Dr. Long is a professor of pharmacology and Dr. Atkinson is a resident in anesthesiology at the S.U.I. College of Medicine.

tervals if exposures continue), for normal blood-cholinesterase levels differ from individual to individual, and variations can't be determined unless a norm has been established. If the enzyme has been inhibited, usually from two to four weeks are required for reactivation.

TREATMENT

The first two measures that should be considered are (1) artificial respiration and oxygen, and (2) intramuscular injection of atropine. No other anticholinergic agent is as effective as atropine. Convulsions and respiratory difficulty are treated by artificial respiration. This may be done by means of a reservoir bag and a face mask or a resuscitator. In emergencies, mouth-to-mouth ventilation should be used. Some method of artificial ventilation will probably be needed for many hours. Necessary equipment must be at hand for at least 48 hours after exposure.

Atropine is used in large doses as an antidote. It is essential that the drug be administered intramuscularly as soon as possible after exposure. The initial dose is 2-4 mg. (1/15 to 1/30 gr.), and 2 mg. intramuscular doses are given every 15 to 30 minutes thereafter, until signs of atropinization appear—flushed face, dry mouth, widely dilated pupils and fast pulse. Repeat 2 mg. doses of atropine are given as needed to maintain atropinization. In severe poisoning, as much as 12 mg. of atropine has been given safely during the first two hours. As the atropine is withdrawn, pulmonary edema or respiratory failure may develop, and therefore the patient must be observed carefully.

Depending on the route of exposure, various decontamination procedures can be used. The compound left on the skin may be removed by means of soap and water. Lavage (with water) should be used if symptoms have not appeared. If equipment for lavage is not available, removal may be attempted in a conscious patient by giving one quart of water or milk and stimulating the pharynx to induce vomiting.

A cholinesterase reactivator, pralidoxine (2-PAM, Campbell Pharmaceuticals, 121 East 24th Street, New York City 10010), is now available.* This compound acts by breaking the bond between the phosphate molecule and the cholinesterase molecule. The result is a normally functioning cholinesterase. However, this is not a replacement for the regimen (atropine, etc.) outlined above.

PROGNOSIS

The first four to six hours are most critical in acute cases of poisoning. Improvement of symptoms upon treatment usually indicates that the patient will survive, if adequate treatment is continued. Combined therapy with atropine and artificial respiration is theoretically capable of protecting a patient against 50 to 100 times the dose that would be fatal without treatment.

CONCLUSION

Poisoning with these insecticides will undoubtedly become more common in the near future. It is absolutely essential that the user of these agents be fully instructed as to their potential toxicity, and be warned especially about the necessity of wearing protective clothing and a breathing mask. Likewise, the physician must be well acquainted with the symptomatology and treatment of organic-phosphate intoxication. Poisoning with these agents is very rarely fatal if proper treatment is instituted immediately.

* Dr. Everett A. Nitzke has a supply of 2-PAM at the Poison Information Center, Iowa Methodist Hospital, Des Moines.

Third Annual Orthopaedic and Rehabilitation Seminar

Third Floor
Younker Memorial Rehabilitation Center
Des Moines, Iowa

Saturday, April 4, 1964

9:15-10:15 FRACTURES AND DISLOCATIONS OF THE CERVICAL SPINE—Robert W. Bailey, M.D., Associate Professor of Surgery, Department of Orthopaedic Surgery, University of Michigan Medical School, Ann Arbor, Michigan

10:15-11:15 FRACTURES OF THE DISTAL END OF THE FEMUR —Hugh Smith, M.D., Campbell Clinic, Memphis, Tennessee; Associate Professor of Orthopaedic Surgery, University of Tennessee, School of Medicine, Memphis, Tennessee

11:30-12:30 MEDICAL IMPLICATIONS OF INSUFFICIENT PHYSICAL ACTIVITIES—Hans Kraus, M.D., Associate Professor of Clinical Physical Medicine & Rehabilitation, New York University, College of Medicine, New York, New York

1:30- 2:30 CURRENT TRENDS IN CHILDREN'S ORTHOPAEDICS—Harold A. Sofield, M.D., Professor, Department of Orthopaedic Surgery, Northwestern University School of Medicine, Chicago, Illinois

2:30- 3:30 DIFFICULT FRACTURES SEEN IN CHILDREN—Walter P. Blount, M.D., Professor and Head, Department of Orthopaedics, Marquette University, School of Medicine, Milwaukee, Wisconsin

3:30 COFFEE

3:45- 4:45 TREATMENT OF CONGENITAL CLUBFOOT—Ignacio V. Ponseti, M.D., Professor of Orthopaedic Surgery, State University of Iowa, College of Medicine, Iowa City, Iowa

4:45- 5:00 Tour of Younker Memorial Rehabilitation Center—(Walter L. Modaff, M.D., Associate Physiatrist, will accompany those physicians wishing to tour the Younker Center).

(Discussion time will follow each presentation)

Poisoning Due to Organic-Phosphate Insecticides

GEORGE L. PAUK, M.D.
Iowa City

At Gorgas Hospital and Coco Solo Hospital, in the Panama Canal Zone, seven fatal, two serious and several mild cases of organic-phosphate poisoning have been recorded in the past three years. The potent anticholinesterase organic phosphates are an important cause of poisoning in areas such as Panama, where these chemicals have become accessible to the public as insecticides. In Japan, an estimated 6,000 deaths were attributed to organic-phosphate poisoning in a five-year period.[1] In the Panama Canal Zone, ingestion was apparently intentional in five cases, four of which were fatal. Death often occurred only a few minutes after ingestion. Smaller doses of these poisons can produce an insidious progression of toxic manifestations.

When this poisoning is promptly diagnosed and treated with one of the recently developed specific antidotes, remarkable recovery can be effected. Since these poisonings are becoming more common, it seems pertinent to review the subject.

CASE REPORTS

Case No. 1. A 49-year-old Jamaican housewife admitted at 2 a.m. had suffered nausea, abdominal cramps and severe diarrhea for 3½ hours. She had taken tincture of opium without benefit. Physical findings of moderately severe dehydration were present. Her temperature was 98°F., and her pupils were pinpoint. The heart rate was normal and regular, and the lungs were clear. Bowel sounds were active. The examining physicians' initial impression was of an acute gastroenteritis. Therapy including intravenous fluids was given. The diarrhea ceased, but the patient vomited several times. At 8:00 a.m. she appeared to be in no acute distress, but at 2:30 p.m. she was found to be comatose and areflexic, and was having labored, "rattling" respirations. The blood pressure was 140/70 mm. Hg, and the pulse was 128/min. There were many coarse rhonchi in the lungs, and three or four ounces of saliva was drained and aspirated from her mouth. An EKG revealed bigeminy with multifocal premature ventricular contractions. The blood sugar was 264 mg. per cent, the CO_2 was 18.4 mEq./L., and the potassium was 3.3 mEq./L. The urine was positive for sugar and acetone. Serum cholinesterase was later reported to be 34 units (normal 130-310 units). Organic-phosphate poisoning was suspected, and one observer noted a faint odor of parathion about the patient. Questioning of the family revealed that "Atomico" roach poison (parathion) was utilized in the patient's home.

At 6:00 p.m., 500 mg. of 2-pyridine-aldoxime methiodide (2-PAM) and 1.2 mg. of atropine sulfate were given. A tracheostomy was also done at that time. At 6:30 p.m. the patient was noted to cough when the trachea was suctioned. At 7:00 p.m. her blood pressure fell to 60/0 mm. Hg, and her respirations became more rapid and shallow. Aramine was given, and produced an effective rise in her blood pressure. Another 500 mg. of 2-PAM was given at 7:15 p.m. Approximately 10 minutes afterward, the patient's pupils dilated to normal size, and gradually she regained voluntary motion. She was fully conscious and well oriented in a few minutes. An EKG then showed a normal rhythm. For approximately 48 hours the patient's blood pressure had to be maintained with injections or infusions of vasopressors, but thereafter the patient was clinically well. Twelve days later, the serum cholinesterase was 185 units.

Comment. In this case is seen the slower progression of symptoms and signs, requiring over 12 hours to develop the moribund state. Parathion has a characteristic odor which, fortunately, was recognized in this instance. If an adequate dose of 2-PAM (1.0 to 1.5 Gm.) had been given initially, a prompter recovery could have been effected.

Case No. 2. A 35-year-old Panamanian woman, after a family argument, had ingested approximately three or four ounces of malathion, in the form of roach poison. She rapidly developed nausea, vomiting and excess salivation. Examination 30 minutes after ingestion revealed pinpoint pupils and hyperactive reflexes. Fifteen minutes later, she developed fibrillatory twitches in all muscles. During the first four hours of hospitalization, 20.2 mg. of atropine sulfate was given her, but it pro-

Dr. Pauk, who now holds a residency in internal medicine at SUI, wrote this paper last year, when he held a similar post at Gorgas Hospital, in the Canal Zone.

duced no change in her signs and symptoms. A supply of 2-PAM was then obtained, and 500 mg. was administered intravenously, with almost immediate cessation of all symptoms of malathion toxicity.

Comment. This case illustrates the prompt results obtained with 2-PAM therapy.

Case No. 3. A one-year-old Panamanian girl had apparently been well until approximately one hour before admission to Coco Solo Hospital. At that time she had suddenly cried out, rolled her head back and became unconscious. On the way to the hospital, she had had a convulsion and had become apneic. Mouth-to-mouth resuscitation had been given, and labored respiration had been restored after 30 minutes.

Physical examination revealed a comatose and areflexic child. The blood pressure was 110/60 mm. Hg, and the pulse was 130/min. Miosis, excessive salivation and lacrimation, hyperactive abdominal peristalisis, and occasional rhythmic contractions of both arms were noted. During the examination, a grossly bloody stool was passed. Laboratory studies revealed: hemoglobin 13 Gm. per cent; white blood cell count 10,550/cu. mm.; urine glucose 2+ and a trace of albumin; serum amylase 552 units; blood urea nitrogen 9.4 mg. per cent; blood sugar 110 mg. per cent; calcium 9.6 mg. per cent; CO_2 17.5 mEq./L.; and potassium 4.8 mEq./L. Endotracheal intubation and nasogastric suction were done, and antibiotics and intravenous fluids were given.

Several hours after the patient's admission, it was learned that on the previous evening several pieces of bread soaked in "Atomico" roach poison had been placed about the house where she lived. Atropine sulfate, 1.3 mg., and 2-PAM, 500 mg., were given intravenously, and one hour later secretions were decreased, and the pupils were normal in size but non-reactive to light. Deep-tendon reflexes and a slight response to painful stimuli were obtained. Seizures occurred periodically and were controlled with sodium amytal. Frequent doses of atropine sulfate were given, and 2-PAM was given every 10 hours. No further bloody stools were noted. Twenty-four hours after admission, the hemoglobin was 10.4 Gm. per cent; the white blood cell count was 15,300/cu. mm.; and the serum amylase was 160 units. Serum cholinesterase was 13 units, and later 87 units (normal 130-310 units). The patient's condition remained approximately the same until 45 hours after admission, when respiratory failure developed. Respiration was maintained by means of intermittent positive pressure, and a tracheostomy was done later. Her condition gradually deteriorated, however, and cardiac action ceased 70 hours after admission. A total of 8.9 mg. of atropine sulfate and 6.0 Gm. of 2-PAM had been given.

Postmortem examination revealed evidence of mild congestion of the liver, spleen, kidneys and brain, and minimal pulmonary edema. The brain showed generalized softening and autolysis. There was focal parenchymal necrosis in the pancreas. At autopsy, the serum cholinesterase was 100 units.

Comment. The failure of the serum cholinesterase to return to normal in this case could have been due to (1) a large dose of the parathion, and possibly a continued slow absorption, or (2) the breakdown of the phosphorylated cholinesterase into a non-reactivable form. Cerebral anoxia may also have produced fatal damage early in the course of the illness.

DISCUSSION

Organic phosphates, such as parathion, inactivate cholinesterases by phosphorylation. Spontaneous reactivation of the phosphorylated cholinesterase by hydrolysis occurs at very slow rates.[2] These compounds also tend to lose an alkyl group upon aging, so as to form compounds which cannot be reactivated even by means of the specific antidote.

Oxygenated organophosphates such as TEPP, panaoxon, DFP, sarin and tabun are potent and immediately active cholinesterase inhibitors. Sarin and tabun, which cause death in a few seconds if a concentrated vapor has been inhaled, are the "nerve gases" that were developed in Germany during World War II. Sulfated organophosphates such as demetonmethyl, methylparathion, malathion, systox, demeton and parathion are oxygenated *in vivo* to form highly active anticholinesterase compounds.[2]

The cholinesterases are a family of enzymes occurring in all tissues of the body, with different esterases predominating in specific tissues. Substrate specificity and kinetic characteristics divide them into two types: (1) acetylcholinesterases (true, specific, type e, or type 1 cholinesterases), and (2) cholinesterases (pseudo, non-specific, type s or type 2 cholinesterases).

Acetylcholinesterase (true cholinesterase) is in highest concentration in nervous-system tissue, red blood cells and muscle. Cholinesterase (pseudocholinesterase) predominates in liver (where it is probably synthesized), in serum and in some areas of the central nervous system.[3, 4] Both types of cholinesterases are inactivated by the organic phosphate compounds.

Acetylcholinesterase in red blood cells and pseudocholinesterase in serum can be quantitatively determined. The serum pseudocholinesterase determination is more commonly utilized clinically, only because it is more easily and reliably performed. Low levels of both cholinesterases occur in anticholinesterase poisoning. Red blood cell acetylcholinesterase is reduced in paroxysmal nocturnal hemoglobinuria and in some other hematologic conditions.[5, 6] Reductions of serum pseudocholinesterase have been observed in severe liver disease. Industrial surveys and studies of unusually prolonged reactions to succinyl-choline during surgical procedures (such as a case which

was recently observed at Gorgas Hospital) have revealed rare cases of familial reduction of red blood cell acetylcholinesterase or pseudocholinesterase.[7-9]

The signs and symptoms of acetylcholinesterase and cholinesterase inhibition are caused by accumulation of acetylcholine. Acetylcholine physiochemistry is complex, but generally its function can be described as being actively involved in the basic reactions of electroconduction in all conductive tissue.[10, 11]

Acetylcholine is synthesized at the neural synapses by acetylation of choline through the enzyme choline-acetylase, but is then rapidly hydrolyzed by acetylcholinesterase. When acetylcholinesterase is inactivated, acetylcholine rapidly accumulates and produces toxic manifestations.

$$\text{Choline} \xleftarrow[\text{Acetylcholine esterase}]{\text{Choline-acetylase}} \text{Acetylcholine}$$

The pharmacologic actions of acetylcholines are generally described as producing muscarine-like and nicotine-like effects.[3] Together, these effects produce (1) initial stimulation and then fatigue and paralysis at the neuromuscular junction, (2) paralysis of the autonomic nervous system ganglia, but overstimulation of the cholinergic nerve endings, and (3) interruption of synaptic transmission in the brain. The mainfestations of organic-phosphate poisoning can thus be predicted.

Symptoms of acetylcholine excess usually appear if the esterases are depressed to 50-85 per cent of normal, but chronic exposure may be associated with some degree of tolerance.[13] Some occupationally-exposed workers had no symptoms, even though cholinesterase levels approached zero.[14] In recovery from organic-phosphate poisoning without specific oxime therapy, the return to normal levels of plasma cholinesterase and red blood cell acetylcholinesterase is slow, taking up to a month or more in serious cases.

TABLE I

SIGNS AND SYMPTOMS OF ANTICHOLINESTERASE POISONING[12]

Ocular	Central Nervous
Miosis	Frontal headache
Lacrimation	Mood changes
Dimness of vision	Drowsiness
Impaired accommodation	Insomnia, dreams
Pain on accommodation	Ataxia
Nasal	Electroencephalographic changes
Rhinorrhea	Hyperpyrexia
Respiratory	Cheyne-Stokes respirations
"Tightness" of chest	Convulsions
Cough	Coma with areflexia
Bronchorrhea	Gastrointestinal
Dyspnea	Anorexia and nausea
Muscular	Eructations, heartburn
Easy fatigue	Vomiting
Muscular weakness	Hyperactive bowel sounds
Fasciculations	Diarrhea
Cramps	Involuntary defacation
Genitourinary	
Frequency	
Involuntary micturition	

One of the hydrolyzed metabolites of parathion is paranitrophenol, which is excreted in the urine. After oral administration of parathion, paranitrophenol is excreted rapidly for a few hours, and then lower, more constant amounts are excreted for three or four days. In cases of heavy dermal exposure, excretion may continue for more than a week.

Of practical importance is the fact that the signs and symptoms of early toxicity vary with the route of entry. Small traces of an anticholinesterase vapor on the external eye will produce an acute miosis, whereas inhalation produces bronchoconstriction, rhinorrhea, bronchorrhea and salivation. Absorption via the skin may produce local perspiration and muscle fasciculation. Nausea, vomiting, abdominal cramps and diarrhea usually occur first in cases of oral ingestion.[13]

Severe poisoning, regardless of route, produces miosis, excessive salivation, hyperactive gastrointestinal function, cardiac slowing and arrhythmias, bronchoconstriction, bronchorrhea, muscle fasciculation, convulsions and eventually a flaccid comatose state. Death is usually due to central depression and peripheral paralysis of respiration.

A recent and apparently incidental finding has been a phasic change in blood coagulability during the acute phase of organic-phosphate poisoning. Initial hypercoagulability, followed by hypocoagulability, is apparently due to a change in Factor VII levels.[15]

Latent effects of organic phosphates are rare. The development of a syndrome known as "ginger paralysis," resulting from myelin degeneration, has been reported.[13, 16] Latent effects may not be due just to the anticholinesterase effects of the organic phosphates.

TREATMENT

Early recognition of this poisoning is, of course, most essential to proper therapy. Important general measures include gastric lavage, skin cleansing, maintenance of respiration and oxygen administration if necessary. Trimethadione or sodium thiopental can be given to control convulsions. Atropine sulfate prevents the access of acetylcholine to parasympathetic-system receptions, and diminishes cerebral stimulation. It does not prevent acetylcholine action at the neuromuscular junction. Large doses administered early are ef-

fective, but only in mild to moderate poisoning cases.

Certain hydroxamic acids and pyridine aldoximes, developed since 1958, are specific antidotes for organic-phosphate poisons. These compounds chemically reactivate phosphorylated cholinesterases with slightly varying rapidity. Within 15 to 30 minutes after intravenous administration, there is an almost complete return to normal levels of the red blood cell acetylcholinesterase, and a slightly lower response of the serum cholinesterase.[1, 17]

At the present time, 2-PAM is the only commercially available specific cholinesterase reactivator. The dosage necessary for complete reactivation is approximately 1.0 to 1.5 Gm. (50 mg./Kg.). Investigation with radioactively labeled 2-PAM has shown that 41 per cent of intravenously administered 2-PAM was excreted in one hour. Repeated doses of 2-PAM may be necessary because the organic-phosphate poison may continue to be absorbed for some time. One can give 2-PAM orally, subcutaneously and intravenously. The more prolonged action when the material has been given orally may prove an excellent prophylaxis against industrial and agricultural exposure to these poisons.

Recently, 2-PAM has also been shown to produce atropine-like effects that tend to facilitate treatment of organic-phosphate poisoning by blocking the action of the accumulated acetylcholine in the parasympathetic system.[14, 18] Large doses of 2-PAM have not produced any serious toxic effects in man.

SUMMARY

Poisoning due to anticholinesterase organic-phosphate compounds is occurring with increased frequency where these compounds are in use as commercial and household insecticides. Cases of intentional and accidental poisoning with parathion and malathion in the Panama Canal Zone have been presented. The diagnosis, physiology and treatment of organic-phosphate poisoning have been discussed.

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Rabies Developments

Iowa has the highest incidence of skunk rabies in the world, Dr. Ernest Tierkel, chief of rabies control for the U. S. Public Health Service, told a staff conference at the State Department of Health late in January. Because the skunk is capable of inflicting severe bite wounds and because it has a high concentration of rabies virus in its saliva, the disease is more readily transmitted throughout the species and keeps it spreading among skunks throughout the Upper Mississippi Valley. Wildlife rabies, particularly among foxes, skunks and bats, has been increasing throughout the nation, whereas among house pets it has decreased as a result of immunization. The chief human hazard from wildlife rabies nevertheless continues to be the occasional pet animal who has not been inoculated.

Two new developments in the fight against the disease were reported by Dr. Tierkel. A series of three shots at weekly intervals and a booster shot six months thereafter are being given as prophylaxis to persons likely to be exposed to rabid animals. The second break-through that he discussed was the fluorescent rabies antibody diagnostic test by which the presence of rabies in animal tissue can be determined in just one day. Older tests took from 14 to 21 days. The two laboratories in Iowa that are now doing rabies diagnostic work are using the new test.

Administrative Medicine: A New Specialty

R. S. HOOVER, M.D.
Waterloo

At the teaching institute of the Association of American Medical Colleges held in December, 1962, Dr. Russel A. Nelson, director of the Johns Hopkins Hospital, recounted a story which provides a point of departure for a discussion of administrative medicine. The story went like this: "An African chieftain was dying, and despite the efforts of his medicine man, it was clear that his life was rapidly drawing to a close. As a last resort, a missionary was called in consultation. He prayed fervently over the chief, but despite his ardent prayers, the chief died. Thereupon, the tribesmen immediately seized the missionary and summarily put him to death."

Dr. Nelson drew two morals from that story. First, he said, it shows that competence in one field does not necessarily indicate competence in another. Second, it demonstrates that if a profession fails to achieve desired results, the people may destroy it.

Simple and anecdotal as the story and its morals are, they can be applied to the medical profession's struggle with the organizational and financial aspects of health care vis-a-vis the public.

As medical students, interns and residents, how many of us have concerned ourselves to any extent with the technics of management or finance, let alone with their applications to the practice of medicine? Yet it is essential that some of us do so, for medical science and practice have become much more than the doctor, his office and his little black bag. Now the practice of medicine has organizational aspects in addition to its traditional ones. Failure to heed these new developments in our field of medical care can result only in a circumscription of our activities, and eventually will bring lay control.

Clearly, we must broaden our competence to include the organizational aspects of medical care. Specialists in medical administration may be the answer. My purpose in writing this paper is to describe medical administration, in the hope that an understanding of it may promote its more intimate incorporation into the teaching and practice of medicine.

Dr. Hoover received a degree in administrative medicine at Harvard University in 1961-1962. He had taken his M.D. at S.U.I. in 1957.

DEFINITION

Briefly stated, this new specialty—administrative medicine—involves the application of management technics to the solution of the problems posed by the needs and characteristics of the three groups interested in modern medical care: the general public, the insurance agencies and the providers of the services.

Administrative medicine is the outgrowth of three movements which have been occurring on the general social and economic scenes:

1. *The growth of theory and knowledge in general administration.* Today, administrators can point to a sound body of administrative theory and knowledge. Management has become a profession, and like medicine, management can be taught and learned. In particular, management thinkers have developed two important principles. First, some carefully thought out guides to action must replace rules of thumb. Second, data must be collected to support decisions, and casual judgments must no longer be relied upon.

2. *The technologic revolution.* The new developments in our technology—automation, atomic energy, jet propulsion and open-heart surgery—have raised many problems. The chief problems that the medical innovations have raised are those of (a) financing their high costs, (b) determining the need for personnel, facilities and quality checks, and (c) distributing the care widely and fairly.

3. *The application of insurance technics to the financing of medical care.* Health-insurance plans have eased the impact of the increasing cost of health care, but they also have raised some profound issues. For example, the following ones have received wide attention:

a. Indemnity *vs.* service benefits
b. Experience *vs.* community rating
c. Exclusions *vs.* comprehensive care
d. Private *vs.* government finance.

THE MEDICAL ADMINISTRATOR

The developments just described have stimulated some members of the medical profession to specialize in medical administration, and thereby to learn and to apply the new management knowledge to the problems created by the technical advances in medicine. Unfortunately, very few such

specialists are available at the present time, although more are entering the field.

His services. The following services are typical of the ones which the medical administrator can offer, either when he acts as a direct administrator or when he acts as a consultant:

1. Community surveys
2. Planning for medical-care needs
3. Method-improvement surveys
4. Clinic management or counsel for a medical group
5. Management audits
6. Personnel education and supply
7. Site and space utilization for a physical plant
8. Medical social science research
9. Hospital administration or consultation
10. Human relations appraisals
11. Fund raising and financial counsel.

His clients. Like his counterpart on the clinical side, the medical administrator has his patients or clients. The number and diversity of clients interested in medical care at the present time are surprising. Most of them need the services of such a physician very badly. The benefits he can provide them—often by means of relatively simple medicines—are also surprising.

Following is a list of potential clients for the medical administrator:

1. Private practitioners, groups and clinics
2. Hospitals, sanatoria and convalescent homes
3. Mental health agencies, clinics and institutions
4. School systems, colleges and universities
5. Welfare organizations
6. Voluntary agencies and professional organizations
7. Industries and small businesses
8. Insurance companies and insurance brokers
9. Architectural firms, pharmaceutical houses, laboratories and medical equipment manufacturers
10. Federal, state and local health departments and agencies
11. Planning groups, consultants, and health and hospital councils
12. Unions and arbitration boards.

His education. Formal training requirements for the medical administrator are still unspecified. From the foregoing discussion, the ingredients of his training would seem rather clearly indicated. They should include work in administrative theory, economics (general and medical), finance, labor relations and medical social science.

At the present time, no academic institution offers an unqualifiedly complete program. The Harvard and Michigan University schools of public health are approaching the ideal, however. Instructional programs in hospital administration—except at the University of Chicago, where the program is being revamped under the direction of Mr. George Bugbee—do not have the broad-gauge approach to medical care that should be expected of institutions producing medical administrators.

CASE HISTORIES

A new specialty always has to prove its mettle before it is accepted either by its own profession or by outsiders. Frequently, the best method for overcoming the initial coldness is a presentation of some success stories. The following case histories illustrate some of the problems with which medical administrators have been asked to deal, the methods they have used, and the results they have obtained.

Case No. 1. An industrial problem. Managers of manufacturing plants in a particular state had become dissatisfied with their industrial-health programs. Accident rates, disability rates and medical-care insurance costs had been rising steadily. A partial survey conducted by the state medical society and the manufacturers' association had confirmed a sorry state of affairs, especially in the smaller plants—those with fewer than 500 employees each. Deviations in some cases were far beyond the national averages.

A consultant was asked to make a survey and to submit recommendations. His survey, conducted over a period of several weeks, revealed virtually no concern by the manufacturers or the medical profession with the maintenance of continuous, scheduled medical services for employees while at work. No one was providing industrial hygiene services, advice on matters related to safety, sanitation, compensation, communicable disease, nutrition or rehabilitation. Health-conservation technics such as counsel on personal health, referral to family physicians and maintenance of complete medical records were nonexistent. Control of absenteeism and employee turnover was makeshift and inadequate.

The consultant recommended that each industry retain a physician and have him implement an industrial medical program to provide services as outlined by the consultant. Not all of the manufacturers followed the suggestions of the consultant, but several did. A year later, when the consultant carried out his evaluation, it was apparent that those who had followed his suggestions had experienced greater than 50 per cent reductions in accident rates, absenteeism and employee turnover; and significantly, physicians' services had decreased by well over 100 per cent. His clients were well pleased, and the medical profession benefited from the public relations point of view.

Comment. This case illustrates the simplest of all administrative technics that the physician trained in administrative medicine can provide—method improvement. Often this service can accomplish handsome savings and can facilitate increased productivity for a very nominal initial outlay of funds.

Case No. 2. A long-term care problem. A group of private investors were considering the construction of a modern, private nursing home. Most of them were unfamiliar with the field of medical care facilities. When they were unable to obtain what they considered competent counsel locally, they sought the services of a consultant.

The consultant performed a survey of nursing-bed needs locally, and familiarized the investors with trends in the long-term care field. He also brought out the administrative headaches and cost factors typical of such a facility. His report was generally pessimistic. Because of his pessimism, the investors decided to look for greener pastures.

Comment. The field of medical care is very complicated, and few laymen—indeed few physicians—are aware of the trends which are developing. The physician trained in medical administration is able to determine needs and give a good prediction of the success of such ventures on both a short-term and a long-term basis.

Case No. 3. A medical audit. Insurance premiums paid by industry in a medium-size industrial city were rising far too fast, according to the leaders of the industrial community. By implication at least, the medical profession was at fault for excessive utilization. The county medical society therefore sought a consultant to perform an audit on the quality of care being provided. The doctors wished to improve their procedures, if they were at fault, or if they were not to blame, they wanted to pinpoint the causes of the soaring costs.

The consultant did a thorough study of the medical care situation in the community, including facilities, personnel, expenditures, organization of services and standards of quality. His findings were transmitted to all those concerned with medical care in the community: the medical society, the hospital administrators, the representatives of industry, and the insurance carriers. His study indicated that the quality of care being given by the medical profession compared favorably with that given in similar communities. In addition, he highlighted certain socioeconomic trends in the city's trade area which had been virtually ignored, such as the high unemployment rate and the above-average proportion of unskilled labor.

As a result of the consultant's work, the medical profession was exonerated and the community was in a position to improve itself through more aggressive industrial development.

Comment. The medical audit is a complicated, statistical, quasi-research effort requiring a close familiarity with the entire span of medical care and medical-care economics. Only a specially trained physician is competent to perform this service.

Case No. 4. A planning problem. The hospital council of a large metropolitan area had been implementing a master plan for the growth of health facilities. Several members of the board had begun to wonder whether the master plan were as sophisticated as it should be, in view of the tremendous advances in medical science and the population shifts which had taken place since the plan was originally drawn, some 10 years previously. Consequently, a consultant was retained to work with the permanent staff of the council to determine whether a new or revised plan were needed.

Comment. Here, the medical administrator brings his broad familiarity with the field of medical care to the assistance of a community council in planning and evaluating the long-term development of health facilities. As an expert on management, he is eminently qualified to help such a group determine health-facility objectives and the plans whereby these objectives can be attained.

Case No. 5. A group-practice problem. A group of 15 doctors in a midwestern city were curious about the effects which the government financing of medical care might have upon their professional and business relationships. Right after the war, the group had been formed by two physicians, both of them general practitioners, but currently the staff members—some of whom were partners—consisted of seven general practitioners, two surgeons, two internists, an obstetrician-gynecologist, a pediatrician and a dermatologist. As a corporation, they owned a fairly new, one-story clinic building. Their general attitude was one of wanting to enlarge their staff, and their practice in the community and the surrounding area.

The consultant spent some time with each member of the group, looked over the character of their practices, and assessed the vitality of the city's economy and long-term prospects. He then wrote an analysis in the light of local and national factors, and made recommendations for the group and for each of the doctors.

His clients were delighted, for he shed light on many issues about which they had been fearful but had had insufficient information.

Comment. Group practice is a form of organization, and it therefore needs direction and coordination. The medical administrator is able to provide both services, for he is well qualified as a manager of medical care organizations.

Case No. 6. A hospital consultation problem. Despite the confidence that they were operating an efficient, satisfactory laboratory, the administrators of a medium-size southern hospital believed that some facets of their operation could profitably be subjected to closer scrutiny. In particular, they wanted to know whether the workload in the clinical laboratory was equitably distributed both among the days of the week and among the available personnel. They decided to seek an outsider

to make the analysis and to suggest improvements in procedure. They believed a consultant would assure them of the necessary objectivity, undivided attention and knowledge.

The consultant made a preliminary survey of the laboratory, and suggested an analytic program for the improvement of performance, to be conducted as the routine work was done. Over several months, the study revealed much duplication of effort, consequent high costs, and a large number of clerical errors.

After a sufficient amount of data had been accumulated, the administrators decided gradually to implement a new set of procedures that the consultant had then suggested. It is of interest that by the end of the first year, the savings effected by the new procedures were in excess of $10,000.

Comment. The medical administrator can undertake methods improvement in numerous medical-care situations. The above case illustrates his activities in the clinical laboratory of a hospital, but he can provide assistance in other departments as well, without jeopardizing the output or the quality of the services provided to the medical staff and the patients.

Case No. 7. A student-health problem. The president of a private college of around 3,000 students felt that his school's student-health program was not all that it should be. For one thing, many students had complained about the quality of care they had received from the one elderly doctor who ran the service. Also, the president felt that a student-health service should be a positive thing, and should have an educational value in keeping with the general objectives of the institution.

A consultant in medical care was retained to look over the student-health program as it existed, and to make recommendations for improving the quality of care provided, and for increasing the program's contribution to the education of the students. He spent several days on the campus, interviewing members of the health-service staff, students and faculty members. Also, he looked over the facilities and investigated the general medical care available in the small community near the college. His report summarized the trends in college health services around the country. He indicated what had to be done to upgrade the health service at this particular college, and he suggested the means whereby the improvements might be effected and utilized most efficiently. The president of the college was extremely pleased with the report. The trustees responded with their support, and prompt action was taken in redesigning the health service.

Comment. This study indicates that many institutions are now interested in medical care, and that medical care has varying meanings in different situations. It is one of the jobs of the consultant to design programs and services so that the meaning of medical care can be maximized to the fullest extent in any given situation.

Case No. 8. A union problem. The president of a small local was preparing to open negotiations with the management of a manufacturing company. Leaders of the union indicated that the local's objectives should give high priority to the achieving of more comprehensive health and accident protection for the workers and their families. A medical-care consultant was retained to advise on the best approach, in view of local and company factors.

The consultant surveyed the local scene, and determined the practices and trends of similar industrial health and accident plans in other areas of the country. He also took into account the seasonal nature of the company's product, the economic prospects of the company, the available health and accident plans, and the attitudes of the local medical society.

His report outlined what he considered to be ideal objectives, in the light of the above factors, and he detailed the means by which those objectives might be achieved. The union used the consultant's report both as a standard and as a guide in its collective bargaining with management.

Comment. The medical-care consultant can provide counsel in medical-care finance. It is extremely important that he should formulate clear and realistic goals, for without such goals, a union's choices of insurance plans become chaotic and contradictory.

Case No. 9. An architectural problem. A small but competent architectural firm had been asked to design a 50-bed hospital for a rural community. Funds were to be supplied from local sources. Several problems confronted the architects. First, the community leaders had not appraised local needs. Second, they had no idea of what sort of functional plan the architects should provide. The architects wisely recommended that the community retain a qualified consultant to assist in formulating the objectives more clearly. A consultant was thereupon retained, and after he had studied the community's needs and socioeconomic status, and the trends, he advised the community not to build.

Comment. The architect translates functional, realistic plans into structures. The role of the medical-care constultant in such a situation as this is to guide the community in determining its health-care needs, in formulating its plans, and in financing a project—if one is truly indicated. Without such a sharing of responsibilities, an outmoded, inefficient and costly building might be constructed.

SUMMARY AND CONCLUSIONS

The preceding discussion and case histories have been intended as indicators of the character and scope of administrative medicine.

Administrative medicine applies modern management concepts to the problems which occur because of the organizational facet of modern medical care.

The medical administrator can function either as an administrator or as a consultant. At the present time, he is most frequently a consultant.

Medical administration is a part of medical care, and should be taught in medical schools as a part of the regular curriculum. It should also be incorporated into the profession, just as the other specialties have been.

The Emotional Needs of the Aged

HAROLD KORNER, M.D.
Waterloo

I HOPE TO PRESENT you with a point of view about the emotional needs of the aged, and to give you some insights into the cultural, social, and personal antecedents of those needs.

Fortunately, the problem is not as complex as it may seem at first glance. A psychiatrist who treats emotional disorders would be interested in hearing many specific details of each patient's life experiences—a time-consuming procedure, not necessary for our purposes here. However, the physician, the nurse, or the aide, or the administrator of a nursing home for the aged should know the general pattern of those emotional satisfactions for which *all* their patients are starved. A knowledge of these general themes is sufficient, since the nursing home environment does not constitute individual psychotherapy, but is a group-living experience. A working knowledge of those emotional needs which are generally applicable to *all* the aged in nursing homes, will enable you to provide a more satisfying experience for the patients, for the staff, and for the administrator.

First, let us investigate the feelings that people have about aging or being old. In our American culture, we have inherited two conflicting traditions.[3] In the authoritarian era of the late 19th century, aging was not feared. Families were immobile, and three generations frequently lived in the same household. The aged grandparent was respected for his experience of life, as the living proof of his mastery of life's problems, and not the least perhaps, simply as one who had managed to live to an old age at a time when most people died in their forties. This respect for one's aged forebears was typical of those periods in history when the family structure was closely knit, when the roles of family members were carefully distinguished, one from another, and when the authority structure in the family was regarded as a useful tool in protecting the younger family members from the exigencies of life.

The second tradition about aging in our culture brands old age as a miserable misfortune.[3] This is the view which developed increasingly during the first half of our 20th century. But if we look at the history of the Western World, we see that it characterized earlier periods as well. In the so-called "Golden Era" of ancient Greece, for example, the same philosophy prevailed. In general, aging is looked upon as a misfortune in times when the family structure is very mobile, when generations live apart rather than together, and when family authority is viewed as a nasty state of affairs. Our grandparents died in their children's homes, but an increasing number of the elderly today die in institutional settings, away from their families.

OUR AGED FEEL BOTH ISOLATED AND CHEATED

And now I need to make you aware of a tremendous conflict that has been imposed upon the elderly people of today. First, remember that if people had always grown old in the bosoms of their families and if that pattern had persisted to the present, the kind of emotional problems that the aged face today would not exist. Or if throughout many generations the aged had been sent away to institutions for the closing years of their lives, and if today's elderly had never known any other tradition, these problems would not have arisen. But a change has occurred. They cannot share life experiences with us, and since for the most part they are themselves hopelessly confused by a world which has overthrown all of the attitudes and standards on which they were reared, they cannot counsel us on how to navigate around life's difficulties.

Dr. Korner, director of the Black Hawk County Mental Health Center, Waterloo, gave this address at the Waterloo Regional Meeting on "Communications: The Key to Understanding," sponsored by the College of Nursing, State University of Iowa, October 22, 1963.

Recent statistical analysis indicates that over one million elderly people are currently in one type or another of institutional setting.[2] This figure will undoubtedly increase by leaps and bounds with each year to come. The problem is not an economic but a cultural one. The wealthy aged may stay in their family mansions, and the middle-income aged may go to live in "retirement villages," but they too are effectively isolated from their children and friends.[1]

I think you can now see how everything points to certain feelings as the inevitable problem areas of the aged. Foremost is the tremendous sense of isolation. They are torn from their familiar settings and have no roots to which to cling.

THEIR BEHAVIOR REQUIRES SYMPATHETIC UNDERSTANDING

This brings up a second problem area. Since no one likes to be torn away and deprived of his familiar surroundings—his friends and all those things which he had expected to enjoy during his old age—he becomes chronically resentful. Yet, the old man or old woman doesn't find much emotional relief in angrily discussing the neglect into which he or she has fallen. He may temporarily "get it off his chest," but only at the price of suffering further complications. For a family is part of one's self, and no one can continue belittling any part of himself. Hence, we see an old lady who deluges her ward group with exciting stories about how wonderful her children are to her, how often they call, how often they write, how often they visit, and how much they wish her to come back to live with them—even though both she and her audience know that her stories are all fabrications. I am sure you see this type of behavior every day. It is important to understand that this is a way in which the aged preserve their self-esteem. If you wish, you can call it "saving face." In your contacts with such patients, I urge you *never to contradict* such pieces of fiction. Many old people do this, literally, in order to stay alive. From psychiatric studies of the aged, we know that despite good physical health, a person, who has lost this bit of self-respect, dies quickly.

In more technical language, one might say that the aged in our mid-20th century culture are forced to give up those familiar behavior patterns from which, in the past, they have derived ego-satisfaction, self-esteem and status. It is not surprising that they should react with frustration, anger, and criticism of society.[2]

FREQUENT INDIVIDUAL ATTENTION IS THE ANSWER

And here we come to the practical problem of the cantankerous aged who "give the nursing-home staff a hard time." You understand that to these old men or old women, "the staff" represents the society outside which has deprived them of all they held dear. Now that we know the cultural, historical, and personal sources of the needs of the aged, what can nursing home personnel do to meet some of these needs? "Those who treat older people intensively and with compassion, usually obtain excellent results."[2] The aide, the attendant, the nurse or the administrator who lets his patients talk to him at least once in a while, will be liked. And if he finds time for his patients again and again and again—even if only for five minutes, two or three times, week after week—then he will be dearly esteemed and, incidentally, the emotional needs of his patients will cause him very few management problems. In psychiatry we say that a strongly positive transference exists in such instances. His patients do more than like him: "They love him, perhaps as the first person who has taken a real interest in them, their needs and complaints within the the past 20 or 30 years. . . . He shows interest; he listens intently; he makes pointed but discreet suggestions; and . . . the patients respond."[2]

With this attitude toward patient care, "50 per cent of older patients will show prompt, significant and durable response to treatment. Another 20 per cent will show some favorable reactions."[2]

Communication is a two-way street. Five minutes of interested listening and talking with an aged person will provide increased self-esteem and an increased sense of well-being, and will lessen the patients' demands.

I like the slogan: "Communications: They are the Key to Understanding" and meeting those of your responsibilities which are set by the patient's needs.

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State University of Iowa
College of Medicine

Clinical Pathologic Conference

CLINICAL SUMMARY

A FIVE-YEAR-OLD GIRL had been referred to the University Hospitals because of vomiting and lethargy. About nine months prior to admission her parents had noticed that she did not want to play as usual. Two months later they had observed that she preferred liquids rather than solids in her diet. She then had become lethargic. Three weeks prior to admission she had begun to vomit, and this symptom had required hospitalization for parenteral-fluid support. Subsequently she had complained of headaches. She had become disoriented 24 hours prior to her admission at the University Hospitals.

On physical examination, the girl's state of consciousness fluctuated between normal responsiveness and lethargy, disorientation and restlessness. Her body temperature was 100.2° F. rectally. The scalp was normal in appearance. There was no evidence of trauma. Pupillary diameter was 4 mm. on either side, and the pupils reacted normally to light and accommodation. The visual fields were full to confrontation. The extraocular movements were normal, and the eyes were conjugate. No nystagmus was demonstrable. Funduscopic examination revealed minimal elevation of the optic discs and venous distention in both eyes. No hemorrhages or exudates were noted in either retina. No cranial-nerve dysfunction was apparent. The speech was normal. The neck was supple, and there was no adenopathy. The blood pressure was 85/60 mm. Hg, and the radial pulse rate was 110/minute. No cardiac murmurs were heard. There was no impairment of strength in the upper extremities, but there was mild bilateral dysdiadochokinesia and ataxia. The patient walked with a wide-based gait and swayed, on the Romberg test. The reflexes were symmetrical, and no pathological reflexes were elicited. The sensory examination was within normal limits.

A lumbar puncture, done by the referring physician just prior to admission, showed an opening pressure of 580 mm. H_2O, xanthochromic fluid, and 2,200 red blood cells and 121 white blood cells per cubic millimeter. The cerebrospinal-fluid sugar was 92, and the protein was 86 mg. per cent. Three days after admission, a lumbar puncture was performed. Fluid did not rise in the manometer. The aspirated fluid was xanthochromic, and contained fresh and crenated red blood cells and 60 white blood cells per cubic millimeter. The cerebrospinal fluid sugar was 37, and the protein 220 mg. per cent. The hemoglobin level was 12.7 Gm./100 ml., and the white blood cell count was 6,450/cu. mm. The peripheral blood smear was interpreted as normal. The urine was negative to chemical tests and microscopic examination. Serum electrolytes were within normal range. Roentgenograms of the chest and skull were interpreted as normal. The pineal gland was not calcified.

Four days after admission, the patient became less responsive. She exhibited a peculiar posture that consisted of tetanic spasm of the neck muscles and hyperextension of the neck. However, there was mild flexion of the lower extremities. Six days following admission, she suddenly became unresponsive, stopped breathing and developed cardiac arrhythmia. Artificial respiration was immediately instituted and was continued by the Anaesthesia Service. As an emergency procedure, the attending neurosurgeon made a parietal burr hole and tapped the left ventricle. A spurt of ventricular fluid suggested increased pressure. The protein content of this fluid was later reported to be 83 mg. per cent. A ventriculogram showed symmetrical dilatation of the lateral ventricles, but no filling of the third or fourth ventricle. The child was then taken to the operating room, where an exploration of the posterior fossa was carried out. Herniation of the cerebellar tonsils was evident. The herniated tissue was resected. A Torkildsen ventriculocisternostomy was accomplished.

Postoperatively, the child was alert and responsive. She moved all her extremities, but displayed an opisthotonic posture. Sixteen hours after operation she developed a temperature of 103.6° F. (rectal), but it fell to 94.4° after sponging. Her condition then rapidly deteriorated, and she died approximately 24 hours after the operation.

CLINICAL DISCUSSION

Dr. Maurice W. Van Allen, Neurology: The junior student, Andrejs Dimants, will present the students' summary.

Mr. A. Dimants, Junior Ward Clerk: We students felt that the signs of increased intracranial pressure were secondary to a space-occupying lesion in the posterior fossa. The differential diagnoses included subdural hematoma, but this was ruled out because of the long history and the lack of a history of trauma. Brain abscess was ruled out because the patient did not display any signs of fever and because she had not displayed any associated infection. We concluded that the patient had a medulloblastoma of the midline of the cerebellum, with associated hemorrhage and necrosis into the tumor. Death was due to pressure on the brain stem from the increased intracranial pressure.

Dr. Van Allen: Thank you very much. We have asked Dr. Robert Joynt to give his analysis of the case.

Dr. R. J. Joynt, Neurology: In this instance, I think the important problem is the differential diagnosis of increased intracranial pressure in a youngster. We know that this patient had increased intracranial pressure because of the symptoms of headaches and vomiting, the signs of papilledema, and the increased spinal-fluid pressure on lumbar puncture.

I think it is well to view the problem of intracranial pressure as a physiologic study. The skull is a rigid structure, and within the skull there are three components: blood, brain and spinal fluid. If any of these is enlarged for any reason, it occupies additional space only at the expense of the others, and eventually there may be an increase in the intracranial pressure. Thus, I think that increased intracranial pressure can be thought of either as an increase in one of these three components or, rarely, as a decrease in the container itself, as by craniosynostosis. In this instance there is no evidence of the latter possibility.

What about the possibility of an increase in the blood component—that is, blood within the cranial cavity resulting in an increased intracranial pressure? There may too much blood coming in, or there may not be enough going out. Either, of course, will increase the amount of blood within the head. An increase of blood going in occasionally happens with arteriovenous malformations that increase the intracranial pressure. As for the possibility of a decrease in blood going out of the head, this can happen in dural sinus thrombosis for instance. However, I don't believe that either existed in this case. I won't go into my reasoning because of a lack of time.

What about an increase in the brain substance itself, or the addition of some solid substance within the brain? The brain itself may increase in size, as in a condition called pseudotumor cerebri, which is a swelling of the brain substance for no discernible reason. Such an occurrence is rather unusual in a child of this patient's age, and I shan't discuss it any further. As for other solid substances within the brain, there may be tumors within the hemispheres, or abscesses, hemorrhages or other space-taking lesions which give rise to increased intracranial pressure. However, in these instances, there are usually lateralizing signs; that is, one side of the nervous system or the other is involved. Since there were no lateralizing signs in this case, I think we'll exclude the possibility of a cerebral tumor.

The third possibility is an increase in spinal fluid. This can result through any of three mechanisms: first, there may be an increase in production of spinal fluid; second, there may be a decrease in absorption of the spinal fluid, or third, there may be a block in the pathway between the site at which it is produced and the point where it is absorbed. What about the possibility of an increase in production of spinal fluid? This is rather rare. Apparently it is supposed to occur with choroid plexus papillomas in which an excessive amount of spinal fluid is produced. This can occur within the ventricles of the brain—but again, because of the time element, I shan't elaborate on why I don't feel this was a factor in this case. What about a decrease in the absorption of the spinal fluid? This can happen in meningitis, for instance, when the arachnoid granules in the region along the sagittal sinus are blocked by inflammatory exudate. Occasionally, after subarachnoid hemorrhage, the blood products block the areas of absorption so that there may be an increased intracranial pressure, again from nonabsorption of spinal fluid. From the history, I don't believe these mechanisms are a possibility. The third possibility is a block in the pathway between the point where the spinal fluid is produced and the one where the spinal fluid is absorbed. Just on the basis of mechanics, this should occur somewhere along the ventricular system, either in the third ventricle, in the aqueduct, in the fourth ventricle, or at the point of egress of the fluid from the fourth ventricle. It could presumably happen over the substance of the hemisphere, but it would take a massive obstruction to do it.

So I think there was a block in the pathway of the spinal fluid, and this, of course, is far and away the commonest cause of increased intracranial tension in youngsters, particularly when no lateralizing signs are present. What can produce this block? It can be due to a congenital abnormality such as atresia of the aqueduct of Sylvius. The cause may be a cyst in the posterior fossa blocking the egress of fluid from the fourth ventricle, or it might be some other congenital abnormality around the base of the brain. Normally, the hydrocephalus would be evident much earlier. Also, an infection can block the pathway. In meningitis, for instance, it can block the aqueduct of Sylvius, or it can block the region around the fourth ventricle so that there may be a hydrocephalus secondary to infection. Or the third

possibility is a tumor of some type along the spinal-fluid pathway. These tumors may be granulomas. Formerly, tuberculomas of the cerebellum were a common cause of increased spinal fluid pressure in children, but they are no longer common. Or it can be a neoplasm, and usually a midline neoplasm.

So I think the best possibility is a midline tumor blocking the pathway of the spinal fluid. Where can we locate this midline tumor? Here, I think we have to go to the protocol and look for helpful signs and symptoms. There are two facts in the history that may be significant. First, there is the story that the child preferred liquids to solids in her diet. Now this may have been just a manifestation of her nausea, and in consequence she just preferred liquids rather than solids. However, there is a possibility this could be some type of polydipsia, and I'm taking the chance that such was indeed the case. The other significant statement presented in the protocol was that mild ataxia was present. So these are two signs or symptoms in the protocol that may be helpful. As far as we know, there were no optic-pathway signs; that is, there was no visual-field loss, and there was no optic atrophy. There were no cranial-nerve signs; there was no nystagmus. These findings were absent, and I think that their absence is significant.

As for the laboratory studies, particularly the lumbar puncture, I don't think they were helpful, other than to show us that an increase in intracranial pressure was present. Concerning the blood in the first tap, the amounts of red cells and white cells were commensurate with those in a peripheral smear, and I think it probably was a traumatic tap.

The roentgen findings would, I think, be helpful in the location of this tumor, and I wonder whether Dr. Van Epps would show the X-rays at this time.

Dr. E. F. Van Epps, Radiology: Ordinarily, radiographic studies of the skull and brain, by ventriculography and/or cerebral angiography, are of considerable help in determining the location and type of lesion producing the increased intracranial pressure. In this case, however, the crisis mentioned in the protocol prevented a complete examination. It was the considered judgment of the neurosurgeon that manipulation of the patient's head would be dangerous. For this reason, we have only two roentgenograms to show you. These indicate a moderate symmetrical hydrocephalus, without localizing the site of obstruction.

Dr. Joynt: We noted from the roentgenograms, then, that a dilatation of the lateral ventricles, at least, was present, and there was no filling of the third and fourth ventricles. Non-filling of the third ventricle may be due entirely to a technical difficulty, for when a patient in quite ill, he can't be manipulated well. Generally, however, in a patient with a posterior-fossa tumor and enlargement of the third ventricle, I should think some air would get into the third ventricle. So I'm taking a chance that the third ventricle actually did not fill because there was something in it. Therefore, even though posterior-fossa tumors are much more common, my diagnosis is a tumor in the region of the third ventricle.

There was some history of ataxia, and the posterior fossa was explored. What tumor might be in this region? It could be one above the third ventricle, such as a pinealoma. This is rather rare at this patient's age, and usually some associated difficulties in eye movements are present. It could be a tumor within the third ventricle, such as a colloid cyst. Again, this is quite rare at this girl's age. It could be an intraventricular ependymoma or a choroid plexus papilloma, but these are both very uncommon. What about the chance that a tumor below the third ventricle invaded the ventricle itself? Here there are several possibilities. Two of the best ones are a glioma of the region of the hypothalamus which could give rise to the polydipsia, if she really had that ailment. If it extended backward, it could get at some of the efferent cerebellar pathways and produce the ataxia, and if it grew up, as such tumors commonly do, it could obstruct the third ventricle, producing an internal hydrocephalus. Another possibility is a craniopharyngioma, which may start in the region of the infundibulum, and although this tumor usually grows downward and erodes the sella, getting at some of the optic pathways, it can grow upward and give hypothalamic signs such as polydipsia. It can also grow into the region of the third ventricle. However, normally it is calcified, and usually there is some sellar erosion, and thus the absence of such a finding may, to some extent, eliminate this possibility. It is my impression that the tumor in this case was an intrinsic glioma, astrocytic or ependymal in cell type, arising from the region of the hypothalamus, perhaps from the upper midbrain, and invading the third ventricle.

What was the immediate cause of death? It is evident from the protocol that the patient became worse following both lumbar punctures, so I think that probably cerebellar herniation occurred, with a release of pressure from below and a forcing down by increased pressure from above. So cerebellar herniation occurred with medullary compression, as was attested to by the changes in the vital signs and the patient's eventual death. I believe exploration of the posterior fossa was probably done in an effort to reduce this possibility of medullary compression, both by excision of the cerebellar tonsils and by a shunt procedure.

Dr. Van Allen: Thank you very much for this analysis, Dr. Joynt.

We are very pleased that Dr. Fernando Aleu is here to tell us what did go on.

Dr. F. P. Aleu, Pathology: In reference to Dr. Van Epps' report of the feelings of the surgeon in-

volved in this case, I should like to add that the excellent surgical report ended with the following sentence: "I feel that further exploration in the region of the third ventricle is needed." Dr. Joynt also was concerned about the findings in the third ventricle. Their concern was fully justified. In the region of the third ventricle, this girl had a very large neoplasm which severely compressed the optic chiasm and nerves. The absence of visual disturbances is puzzling. There was also a significant lateral displacement of the optic tracts.

The signs and symptoms which this patient had are all explained on the basis of this tumor. The headaches and lethargy were the result of hydrocephalus and hypothalamic involvement. Her preference for liquid diet, or her polydipsia, if you prefer, was also related to hypothalamic dysfunction. A sign that I did not hear many comments about, but which was present, was the cervical rigidity—apparently one of the variety which usually is seen in tuberculous meningitis. This could well be explained by neoplastic invasion of the basal meninges. Finally, the opisthotonus-like picture which the patient presented terminally was consistent with bilateral compression of the pyramidal tracts at the level of the cerebral peduncles. All of these were present in this case. Also, an increase of the cerebrospinal-fluid protein is usually seen in tumors of this region, and, associated with it, an increased pressure.

The reason why Dr. Van Epps and his associates had difficulty visualizing the third ventricle is that the tumor took up all available space in the area. Two photographs will illustrate the interference with the anatomical pathways, and thus, with the signs and symptoms. In a ventral view of brain, the floor of the third ventricle is seen to be dilated and bulging from the presence of finely granular, pink, neoplastic tissue. The optic chiasm is definitely displaced frontally, and the optic tracts laterally. The tumor is in intimate contact with the arachnoid, possibly infiltrating it, and it also seems to be compressing the mesencephalon.

A sagittal view explains some of the difficulties the patient had. The tumor is seen obstructing the outflow of the third ventricle by aqueductal compression. It is also displacing the lamina quadrigemina occipitally, and exerting pressure in the mesencephalic structures. The tumor itself is granular and focally hemorrhagic. There was also some evidence of increased intracranial pressure, usually identified by a flattening of the gyri and a corresponding narrowing of the sulci, uncal grooving and herniation of the cerebellar tonsils.

If it were not for the fact that a pathologist is expected to produce a number of microscopic slides, I would end the discussion here. Any neoplasm of this size in this region can produce the signs and symptoms discussed here today. So could a golf ball, for example. It's not a matter of histology; it's a matter of mechanics; it's a matter of location; it's a matter of interference with certain functions and pathways. However, in keeping with the tradition of the specialty, we shall show a few histologic preparations of the tumor and other pertinent findings. The first slide makes clear that we are dealing with a vascular neoplasm. Vessels are abundant, and around them are large cells arranged in a circular manner. These cells just happen to be around the vessels, and thus it would be improper to call this structure a rosette. We prefer the term pseudorosette. The cells are large and hyperchromic, and some of them exhibit mitotic activity. In many areas, a papillary arrangement is common. Foci of necrosis are scattered throughout the tumor.

In a higher-power view of the neoplasm, the supporting stroma is well visualized. It consists of glial tissue. Some of its components have atypical features, but there is no great difficulty in identifying its nature. Dr. Joynt mentioned the fact that a choroid-plexus papilloma should be considered in the differential diagnosis. I share his view. In some instances, a choroid-plexus papilloma might be difficult to differentiate from an ependymoma of this nature, if it were not for the appearance of the supporting stroma, which in the former is connective tissue, not glial. Some cells in this region form good rosettes. In them the cells are arranged in a circular pattern just for the fun of it, without the presence of a vascular structure around which they might gather. A rosette is a sort of spontaneous, free-willed behavior, and not determined by pre- or co-existing structures.

The next section includes tissue adjacent to the neoplasm and is a good example of perivascular inflammation. Many students of cerebral pathology have a partially justified tendency to regard perivascular cellucitis as a trade mark of infectious encephalitic disorders. It is not. Its presence means only that necrosis is not far away. Whether the necrosis is produced by an infectious organism, a neoplasm, or a physical agent is irrelevant. The slide also shows the lacy structure of a swollen brain. In a high-power view of this field, the glial nuclei are surrounded by a large, clear halo. It was thought that this sort of perinuclear vacuolization was due to an accumulation of extracellular fluid around the glial cells. Electron microscopic studies have proved that in most cases this is untrue, and we have some of our micrographs to illustrate the point briefly. The cellular processes are closely apposed, and there is no significant extracellular space in the normal neuropile. In cerebral edema in a mouse, precisely due to an artificially-implanted neoplasm, the glial processes swell considerably without any significant change in extracellular space. This swelling may reach remarkable proportions, but no change is noted in the extracellular compartment; only in late stages does the extracellular phase develop. These observations perhaps may support some of the con-

cepts expressed by Drs. Perret and Kernohan some time ago, establishing differences between dry swollen brain, and wet swollen brain. When the fluid remains within the glial processes, we face a dry type of edema, and when these processes break, through the pressure and mechanical distention of the plasma membrane, the other situation follows.

Finally, three more color slides will illustrate terminal stages in the development of this unfortunate case. The first is a P.A.S. stained section of a bronchus, demonstrating the presence of abundant mucus debris which almost obliterates the bronchial lumen. This usually is associated with some degree of alveolar pulmonary collapse, as was the case here. The alveoli have lost much of their air content, their walls are closely apposed, and there is very little space for air exchange. Some degree of hypoxemia is likely to result, and if one has the curiosity to look in the central nervous system for signs of hypoxia, his curiosity is rewarded, as can be seen in the next slide. It portrays early degenerative changes in the large neurons of Purkinje, in the cerebellum. They are very sensitive indicators of deficits in hematic oxygenation, and their pale eosinophilic appearance is characteristic of the so-called homogenizing change.

There is no way to conclude the case other than the one that Dr. Joynt chose. We are dealing with a grave mechanical problem in a region where many vital structures are present. Its cause was an ependymoma of the third ventricle. On this, a severe cerebral edema was superimposed, creating further difficulties, herniating the cerebellar tonsils down into the foramen magnum, interfering with the function of the medullary nuclei and producing respiratory difficulties which terminated in death.

Dr. Van Allen: Thank you very much, Dr. Aleu. We have all appreciated this elucidation of cerebral edema.

The extracellular space is not the same in the brain as it is elsewhere, and for the most part, it seems, the space is intracellular. Some confusion arose in this case because of the variance between the findings in the lumbar puncture reported by the referring physician and what was found here. This kind of discrepancy is a frequent cause of concern to us in neurology. Dr. Joynt, why was the pressure of the spinal fluid 580 mm. of water at home, and zero here?

Dr. Joynt: With the original lumbar puncture and following it, there was a loss of spinal fluid; and as no more spinal fluid was reaching the spinal subarachnoid space because of the blockage, there wasn't enough to fill the space on the second lumbar puncture. There wasn't so much fluid the second time, so the pressure was greatly reduced.

Dr. Van Epps: It's always incumbent upon the radiologist to attempt to find the lesion by positioning the patient. In other words, we want to fill the ventricular system in its entirety, for otherwise, one is unable to identify the site of an obstruction. Dr. Aleu alluded to the fact that in this instance the tumor filled the entire third ventricle so completely that no air could enter. The radiographs of a comparable case reveal only a small amount of air surrounding a third-ventricle colloid cyst in the brow-up lateral projection. Note that there is no third ventricle in any of the routine films. In the case under discussion, it was impossible to position the patient for better visualization. We now know that no air *could* have reached the third ventricle, because it was filled with the tumor.

Dr. Van Allen: Thank you very much, Dr. Van Epps. Dr. Herbert Locksley was "on the firing line" when all this was going on. Dr. Locksley, would you like to discuss the case?

Dr. H. Locksley, Surgery: Pathologists have the magnificent capacity of tying up difficult cases into logical and tidy packages. Often, however, they thus obscure the problems the clinician has had at the bedside, and his urgent "gropings" in an emergency situation to sort out the differential diagnosis and to make a rapid and correct decision. I wish Dr. Joynt had been with us at that time to separate the "wheat from the chaff"—or perhaps in Iowa we should say "the corn from the cob."

This child presented a complex differential diagnosis of brain tumor. She had a nine-month history of symptoms, which is a little long at her age. She was lethargic, she liked to sleep, and she was a major feeding problem. Her doctors and family had considered psychiatric therapy. Only when she became mentally confused and experienced nausea and vomiting, did the likelihood of a neurologic disease emerge. Following her admission to the hospital, the first lumbar puncture showed over 200 white cells in the cerebro-spinal fluid, which raised the spectre of low-grade meningitis. When she came here, several prominent clinical features were noted at bedside. First, she refused food. Second, she was militantly thirsty. But a diagnosis of polydipsia was difficult. She could take no more than sips of water, because larger amounts caused her to vomit. Although her mother was kept continually on the run to give her sips of water, her total intake and output were not high. There was another unusual feature. Her mother told us that over the previous months the child's hair had been falling out and that she had to brush her head with great care. This raised the spectre of a possible heavy-metal poisoning or possibly a hypervitaminosis A.

The second lumbar puncture was done, I suspect, because of the original findings of a pleocytosis in the spinal fluid. It was perhaps born of a necessity to find out the nature of the fluid, and when the doctor aspirated fluid, the pressure appeared to be very low. Although the cerebrospinal-fluid white-cell count was somewhat lower the second time, there were still 60/cu. mm. This finding

did not exclude infection, nor did it satisfy the diagnosis of tumor. Subsequently, the most striking clinical features were excruciating headache, a painfully stiff neck, and the fact that if one barely touched her head, she screamed pitifully.

There was one other aspect possibly related to the hypothalamus. The moment she was left alone, she fell into a deep sleep, but if one shook her or otherwise attempted to arouse her, she awakened immediately, and gave fairly clear, intelligent responses, except during her occasional periods of delirium and confusion.

Now from an understandable humanitarianism, she was given a small dose of codeine for her excruciating headaches. This may have had something to do with her subsequent respiratory arrest. Happily, someone was at hand to give her artificial respiration, and the Anaesthesia Service introduced an endotracheal tube and continued the support of her respirations.

At that time, we were called. Burr holes were made as an emergency measure to decompress her ventricles, in case increased intracranial pressure and obstruction of the foramen magnum were the cause of her medullary failure and the misleading low LP pressure. In fact, her ventricular pressure proved to be very high. Perhaps you will condone our reluctance to pursue a complete air study under these desperate circumstances. The ventriculograms demonstrated that she had symmetrical enlargement of the lateral ventricles—presumptive evidence of an obstruction distal to them. The usual maneuvers were made for demonstrating the third ventricle, but they failed.

Although spontaneous respiration had resumed, I did not feel that further strenuous procedures were warranted, for we already had reasonable indications to proceed with exploration of the posterior fossa. The posterior-fossa exploration was normal, except for herniation of the cerebellar tonsils below the foramen magnum. The tonsils were resected, and the fourth ventricle unblocked. I passed a catheter through the fourth ventricle and aqueduct to gain some idea of whether the patient might have a brain-stem tumor with obstruction of the aqueduct. The catheter passed about 3.5 cm., a distance which is just a little short. I must usually see it pass at least 5 cm. before being satisfied there is no obstruction. The possibility arose, therefore, of a lesion higher up in the third ventricle to which we did not have access from the posterior fossa. This hypothesis was supported by three findings: first, there had been no filling of the third ventricle in the ventriculogram, although we had made a try at it; second, the catheter could be passed only a short distance via the aqueduct; and third, our exploration had failed to explain the child's long illness. We assumed that the herniation of the cerebellar tonsils was probably secondary to increased intracranial pressure. This led, then, to the thought that if and when she recovered from this acute situation, further study would be in order. The Torkildsen procedure (ventriculo-cisternostomy) was done to shunt fluid from the lateral ventricles to the cervical subarachnoid space, in case she did have a tumor obstructing the upper aqueduct or third ventricle.

Dr. G. Perret, Surgery: Was there any evidence of tumor in the fourth ventricle or aqueduct?

Dr. Aleu: No, sir, there is nothing in the report which would indicate that. There was no extension of the neoplasm to the fourth ventricle or aqueduct.

Dr. Locksley: May I add one more point about treatment? Had we known at the time of respiratory arrest that this was a third-ventricle tumor, she would have needed either a ventriculo-cisternostomy, which was done, or some other CSF shunting procedure. I am aware of no operation whereby we could have removed this infiltrating tumor from the third ventricle. She probably would then have been given irradiation therapy, and it might have provided palliation of her symptoms for a year or so.

Student: I'd like to ask Dr. Locksley whether he considers aspiration of cerebral spinal fluid a dangerous procedure, and if so, whether there are any other procedures which can be done safely?

Dr. Locksley: When one suspects an intracranial tumor and there is any indication of increased pressure, aspiration is highly hazardous. In an instance such as this, where examination of the fluid for a possible meningitis is regarded as important, the amount removed should be restricted to a bare minimum, and certainly to not more than 1 cc. Occasionally one must resort to puncture of the cisterna magna at the foramen magnum. In this case, cisternal puncture might not have succeeded because of the tonsillar herniation, and would have presented hazards of its own. One would not like to proceed directly to ventriculography, as an elective procedure, until meningitis had been reasonably well excluded.

SUMMARY OF NECROPSY FINDINGS

Papillary ependymoma, third ventricle

Posterior craniotomy, postoperative, with ventriculocisternal shunt

Cerebral edema

Partial atelectasis, right lung

STUDENTS' DIAGNOSIS

Medulloblastoma of midline of cerebellum with pressure on brain stem

DR. JOYNT'S DIAGNOSES

Glioma of astrocytic or ependymal cell type arising from the hypothalamus and invading the third ventricle

Cerebellar herniation with medullary compression.



BREECH PRESENTATION

Even in this enlightened age of modern obstetrics, breech presentation continues to offer some serious management problems. A recent article by Todd and Steer,* of the Sloane Hospital for Women, Columbia-Presbyterian Medical Center, New York City, relates the experience with "term breech" there during the years 1949 through 1959. Physicians who occasionally are confronted with this complication will find the study of unusual interest.

The 1,006 patients represented 2.55 per cent of 39,455 with term deliveries during the 10-year period. A rather surprising finding was that 49 per cent of the patients with breech presentations were primiparas, in contrast to an incidence of 38 per cent primiparas in the total group of about 39,000. This difference was ascribed to the greater ease with which the fetus turns spontaneously in multiparas.

The group of 1,006 patients consisted of 663 ward patients, of whom 292 were primiparas and 371 were multiparas, and 343 private patients, of whom 202 were primiparas and 141 were multiparas. All private patients were delivered by an attending obstetrician. Breech deliveries on the ward service were performed by the senior resident, or by a junior resident assisted by the senior resident. An attending physician was called if difficulty was anticipated or if labor did not progress normally.

The purpose of the study was to determine whether adequate examination and observation would enable one to select those patients who could be safely delivered from below, and those who should be delivered by cesarean section. Especially, it was hoped that an answer could be found to the question of whether delivery could safely be continued from below if a breech presentation showed steady progress during a normal labor and delivered the buttocks spontaneously.

There were 688 cases (479 ward patients and 209 private patients) in whom delivery was spontaneous or assisted. An "assisted breech delivery" was one in which the breech delivered to the umbilicus spontaneously, and then the delivery of the shoulders, arms and head was assisted. In this group of 688 deliveries, there was a total perinatal mortality of 17, but only six of the deaths (0.9 per cent, and all on the ward service) could be attributed to the breech delivery.

Breech extraction was performed in 82 patients —53 on the ward service and 29 on the private service. There were 10 perinatal deaths in this group, five of which (6.0 per cent) were the result of the delivery. Four of the deaths were on the ward service, and one occurred on the private service.

Cesarean section was the method of delivery in 236 cases. It was performed in 131 (20 per cent) of patients on the ward service, of whom 83 were primiparas. On the private service there were 105 (31 per cent) deliveries by cesarean section, and 68 of the patients were primiparas. There were six perinatal deaths on the ward service and one death on the private service, none of which could be ascribed to breech delivery.

A total of 34 (3.4 per cent) perinatal deaths occurred in the 1,006 deliveries. Twenty-seven deaths occurred on the ward service, and only seven on the private service. Only 11 deaths (10 on the ward service and one on the private service) were directly due to breech presentation. The causes of the 11 deaths were: trauma 4, asphyxia 4, and trauma and asphyxia together 3. The obvious differences in perinatal mortality between the two services were ascribed to certain differences in management.

On the private service, cesarean section without labor was performed in 37 primiparas and in five multiparas, totaling 11 per cent of the 343 breech deliveries in the private pavilion. By contrast, cesarean section was done in 20 primiparas and six multiparas on the ward service, who represented a little less than 4.0 per cent of the ward patients with breech presentations. The difference indicated a more liberal attitude and a better selection of patients for cesarean section on the private service.

The incidences of breech extraction were nearly identical on the two services, but the perinatal mortality rate on the ward service was almost three times that on the private service. The experienced obstetrician is cognizant of the great variations in difficulty which may be encountered in breech extractions. An "elective extraction" was one done to shorten the second stage of labor, and was started with the breech on the perineum. Elective breech extractions constituted 55 per cent of extractions on the private service and 28 per cent on the ward service. There was no perinatal mortality from elective extraction in either group.

Complications of labor were the remaining indications for breech extraction, and the incidence of this procedure on the ward service was twice that on the private service. Prolapsed cord was the indication for breech extraction in 17 per cent of the private patients and in 28 per cent of the ward patients subjected to this procedure. A prolonged second stage of labor was the indication for extraction in 28 private patients and 17 ward patients,

* Todd, W. D., and Steer, C. M.: Term breech; review of 1,006 term breech deliveries. OBSTET. & GYNEC., 22:583-595, (Nov.) 1963.

with one perinatal death in the former group and four deaths in the latter. In 21 per cent of the breech-extraction cases on the ward service the indication was fetal distress, but on the private service no patient was subjected to extraction for that reason. Primary uterine inertia was the indication for extraction in 6 per cent of the ward patients, but in none of the private patients.

As a result of the extensive experience at Sloane Maternity, Todd and Steer arrived at some definite conclusions: "It seems quite clear that the breech presentation should be managed in one of two ways: by a vaginal delivery following steady progress through a definitely ample pelvis, or by cesarean section. When the dimensions of the pelvis are smaller than the minimums in either direction, or there is encroachment on the capacity of the pelvis at any level, a decision to allow labor and to attempt delivery from below must rest on other factors—in particular, pelvic type, fetal size, type of breech presentation, quality of labor, and descent of the breech during labor."

The authors also assert that stimulation of a primary inert labor, except under rare circumstances, carries an unjustifiable fetal risk. They found that the only risk from premature rupture of the membranes was an increase in the incidence of prolapsed cord from 3.1 to 4.7 per cent. There is, however, a real increase in the risk of prolapsed cord, and cesarean section is probably the safer method of delivery unless the pelvis is known to be ample and the cervix is fully dilated. Their results showed that primary uterine inertia and fetal distress are serious complications of breech presentation, and that cesarean section should be performed when these complications appear.

The differences in the management of breech presentation at term on the ward service and on the private service reflect the benefits of mature judgment, broad experience and skillful technic. There is probably no field in medicine in which these attributes are more important than in the handling of the complications of labor. The experience at Sloane Maternity should be helpful and of great interest not only to the neophyte but also to the obstetrician of broad experience.

PATHOGENESIS AND MANAGEMENT OF SEPTIC SHOCK

Progress in medicine is made by questioning the validity of established physiologic and pathologic concepts and the merit of accepted principles of therapy. Several recent articles in the literature have represented diametrically opposed ideas concerning the pathogenesis and treatment of the shock which accompanies bacteremia due to gram-negative organisms. Out of this controversy will come a better understanding of bacterial shock, and unquestionably an improvement in our management of this very serious condition.

Lansing[1] has defined septic shock as a "state of hypotension caused by bacteremia and accompanied by oliguria, signifying decreased blood flow." In bacteremia due to gram-negative organisms, shock is attributed to an endotoxin, and in gram-positive bacteremia, the state of shock is produced by an exotoxin. According to Lansing the clinical picture of septic or endotoxin shock is characteristic. First of all, there is a predisposing factor such as gynecologic, urologic or intestinal surgery. The warning signal is a chill with rigors, followed within a period of hours by the onset of shock. Though the interval is 13 hours, on the average, it may be very much shorter. Following the chill, there is a rapid rise in temperature to 103-105°F. and the early development of leukocytosis to 15,000/cu. mm. or more.

Lansing describes two types of septic or endotoxin hypotension. First there is "warm hypotension," in which the patient is alert and his skin is warm and dry. In this phase, the cardiac output is increased, vasodilatation is present and the urinary output is good despite a lowered blood pressure. Warm hypotension is a favorable state that responds to proper treatment. Second there is "cold hypotension," in which the patient is cold and sweating, cerebral function is depressed, the veins are collapsed and there is a marked diminution of urinary output. Cold hypotension is a highly lethal state resulting from the inadequate or improper treatment of warm hypotension.

Lansing postulates that the local effect of endotoxin on the tissues is a steady rise of histamine that is produced by the reticuloendothelial cells. The general effect of endotoxin is a massive release of adrenalin and noradrenalin. Early in shock, the high concentration of catecholamines causes vasoconstriction, but later, a gradual exhaustion of the adrenal medulla results in a fall in the concentration of these substances. A gradual increase in the local concentration of histamine and a gradual decrease in the concentration of the catecholamines leads to vasodilatation, a decline in peripheral resistance and sludging of blood. This mechanism accounts for the marked drop in venous return to the heart which is characteristic of septic shock. The author asserts that if this hypothesis is correct, the use of adrenergic blocking agents would be contraindicated in established septic shock because the peripheral resistance is low rather than increased. The use of vasopressor agents, on the other hand, is therapeutically sound, in that they restore the balance between the steadily increasing vasodilatation caused by the histamine and the diminishing vasoconstriction produced by the catecholamines.

Another hypothesis proposed by Lansing to explain the action of endotoxin is that of allergic or toxic hypersensitivity to this compound. In rabbits, the administration of endotoxin 24 hours after an initial sublethal dose gives rise to widespread ne-

Editorials continued...

crosis of many organs, particularly the liver and kidneys, in which acute tubular necrosis occurs. This response in the tissues is the so-called Schwartzman reaction. The possibility that such a hypersensitivity occurs is the major reason for the administration of hydrocortisone in large doses to patients in septic shock. The purpose is to block the allergic response, not as a replacement for the steroid output of the adrenal cortex.

In the treatment of septic shock, Lansing emphasizes the need for immediate, vigorous and intensive therapy with large doses of antibiotics after appropriate blood, urine and wound cultures have been taken. Cautious fluid and electrolyte replacement is important, though the hazard of pulmonary edema must be kept in mind. Vasopressor drugs are important in restoring the blood pressure to safe levels. If the patient does not improve promptly, large doses of intravenous cortisone are given. The adequacy of treatment is determined by the blood pressure and the urinary output.

Recently, Lillehei and colleagues,[2] of the University of Minnesota, have reported their experimental work on endotoxin shock and their therapeutic approach to this problem. Their concept of the pathogenesis and treatment is quite contrary to the views expressed by Lansing, and at variance with the conventional principles of management of endotoxin shock.

As a result of their experimental work in dogs, the Minnesota group have concluded that the deleterious effects of endotoxin are the result of the sympathomimetic influence on both the small arteries and veins which causes vasoconstriction in certain selected visceral areas. As a result of this spasm, which affects both the venous and the arterial side of the capillary bed, an increasing portion of the circulating blood volume is trapped within the visceral bed. Endotoxin produces its effects principally by calling forth increased levels of the catecholamines. With the resultant mechanical limitation of blood flow, subsequent ischemia and visceral anoxia inevitably occur. In the dog, it is the intestine which is unusually sensitive to endotoxin; in the rabbit, it is the lung; and in man the most obvious changes occur in the kidney.

Lillehei states emphatically: "Vasopressor agents of all kinds are used in the clinical treatment of endotoxin shock even though there is not one whit of evidence from the experimental laboratory nor from controlled clinical studies that such agents are of any value; rather, most studies indicate that vasopressor agents actually intensify the tissue damage caused by endotoxins. Despite this, the promiscuous use of vasopressors continues throughout the land and, in our opinion, accounts for the low state of our accomplishment in treating gram-negative bacterial shock."

According to the Minnesota surgeon, a cardiopulmonary bypass is the closest counterpart to induced, controlled shock produced in the laboratory. It was found that plasma catecholamines regularly increased five- to ten-fold when bypass was prolonged beyond one hour. For this reason, in patients in whom pulmonary bypass is contemplated during open-heart surgery, pretreatment with sympathetic blocking agents is undertaken.

On his surgical service, Lillehei employs the following technic in managing patients suspected of having gram-negative bacteremia with incipient or actual shock. A blood culture is taken, and appropriate antibiotic therapy is initiated. Cultures are also taken of the urine, sputum, wounds and drainage sites. A plastic catheter is introduced into the superior or inferior vena cava, and is used for the infusion of fluids and for the measurement of venous pressure. A plasma infusion of at least 500 ml. is given the first hour. Immediately after introduction of the catheter, 500 to 1,000 mg. of hydrocortisone is given, and is repeated in four to eight hours. According to Lillehei, this regimen usually brings the patient out of shock, urine output is restored, and the improved condition of the patient permits investigation and treatment of the source of the infection. Further blood or plasma infusion may be required, and this is determined by the venous pressure, the blood pressure and the urine output. This plan of treatment corrects hypovolemia, it combats infection, and the large doses of hydrocortisone block the sympathomimetic action of endotoxin. It is emphatically pointed out that if vasopressor drugs are used to treat the condition, either they are ineffectual, or by increasing visceral ischemia they potentiate the shock caused by the endotoxin. Vasopressors have not been used on Lillehei's surgical service for the past five years.

Nickerson,[3] of the University of Manitoba, has stated that preoccupation with blood pressure as a sign of and as a prognostic criterion in shock has prevented the clinical use of vasodilation as a therapeutic measure. From his work in the laboratory and in clinical studies, it became evident that vasoconstriction in response to hyperactivity of the sympathetic nervous system may play a deleterious role in the development of shock. According to Nickerson, preliminary results *in the treatment of clinical shock of varying etiologies* with the adrenergic blocking agent Dibenzyline appear to confirm the benefit demonstrated in the laboratory. From this clinical experience it appeared that beside exerting a favorable effect on the shock process *per se,* it also served as a reliable measure of the efficacy of prior therapy with blood and other fluids, and appeared to permit the more rapid administration of larger amounts of intravenous fluids in patients with myocardial inadequacy.

In a discussion of the subject of endotoxin shock, Fine[4] said there is quite general agreement that the catecholamines are vicious compounds which play a fundamental role in the pathology of refractory shock. He also asserted that there is a

growing suspicion that vasopressor agents are undesirable because they depress the blood flow through vital organs in which blood flow is already too low. He concluded that from the clinical evidence the advantages of Dibenzyline need to be more fully substantiated. If further studies demonstrate that antiadrenergic drugs improve cardiac output even with a fall in blood pressure, the use of Dibenzyline or some similar agent will grow.

At the present time, the precise pathogenesis of septic shock has not been fully clarified. There is considerable controversy over the choice of vasopressor or antiadrenergic drugs in the treatment of refractory shock, thus leaving the clinician in the dilemma of choosing between two opposed schools of thought. This, however, is no unique experience in this era of rapid scientific development. The issue will be resolved.

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3. Nickerson, M.: Sympathetic blockade in therapy of shock. Am. J. Cardiology, **12**:619-623, (Nov.) 1963.
4. Fine, J.: Panel discussion: etiology and classification of shock. Am. J. Cardiology, **12**:628-631, (Nov.) 1963.

THE LIMITED USEFULNESS OF VITAMIN B_{12}

In a physician's practice, there are two—and only two—groups of patients who require treatment with vitamin B_{12} (cyanocobalamin). One of these two groups lacks intrinsic factor in the stomach for an unknown reason or because of stomach surgery. The other group suffers disease or absence of the ileum.

Of these two groups, those who lack gastric intrinsic factor are the more common. They have Addisonian pernicious anemia. Pernicious anemia is recognized on the basis of macrocytic anemia, glossitis, neurologic signs, absence of free gastric hydrochloric acid with histamine stimulation, megaloblastic bone marrow, and a reticulocyte response to B_{12}. The radioactive cyanocobalamin absorption test (B_{12} Schilling test) is necessary to establish the diagnosis in a patient who has already received treatment, or to differentiate pernicious anemia from the malabsorption states. In the 1920's, treatment consisted of eating large amounts of meat mixed with gastric juice from a normal person, and it was successful despite the taste. In the 1930's, dessicated hog stomach was used. Later, injectable liver extract was developed, and since the 1940's, injectable B_{12} has been used.*

All total-gastrectomy patients exhaust their body stores of vitamin B_{12} within three to six years, and require parenteral injections. In the same length of time, one sixth of all subtotally gastrectomized patients show a deficiency of gastric intrinsic factor and must be similarly treated. Besides lacking intrinsic factor, they also lack the optimum acid pH for binding intrinsic factor to the B_{12} contained in the diet.

If no malfunctions of the stomach are present to explain the megaloblastic anemia, the cause must lie distal to the pylorus. These distal events hamper the intestine in absorbing the needed B_{12}. Since ileum is the only area where B_{12} is absorbed, obvious harm results from intestinal strictures or anastomoses that bypass this absorptive area. Regional ileitis, idiopathic steatorrhea, tropical sprue, small-bowel malignant infiltrations or sarcoidosis all jeopardize the ileum's function. Pancreatic insufficiency states deprive the duodenal contents of bicarbonate, and the resultant lack of alkalinization inhibits B_{12} absorption. Rarely, fish tapeworm or bacteria competing with the ileum for ingested B_{12} decrease the delivered amount. In all of these diseases, the parenteral administration of B_{12} is required, unless the intestinal disease can be alleviated surgically or medically.

Newer testing technics, including vitamin B_{12} blood assay, folic acid deficiency assay, and whole body radioactive B_{12} counting, will help define the etiology and mechanisms of the megaloblastic anemia that accompanies some cases of pregnancy, use of diphenylhydantoin (Dilantin), calcium-deficient states and alcoholism.

For effective treatment, the minimal quantity of vitamin B_{12} is 30 micrograms every month. Probably 30 to 40 per cent of this is soon excreted in the urine. Although this dose maintains the peripheral blood count at an adequate level, much work has indicated that the blood B_{12} level is too low. For this reason, 250 or 500 micrograms per month is more physiologic.*

Needless to say, oral folic acid is not a substitute for B_{12}. For the patient who refuses this regimen or who is unable to come to the physician's office monthly, two alternatives are available. The less risky one is to saturate the body stores with large (1,000 microgram) intramuscular doses over a four- to eight-week period, permitting subsequent injections every three, six or 12 months. The other alternative is the use of oral daily vitamin B_{12}. In reported series of cases utilizing these methods, treatment failures have occurred. Clinical trials with an injectable derivative of cyanocobalamin, involving a smaller urinary-excretion loss, have shown promise.

For the future, use vitamin B_{12} only for patients with the two above-mentioned conditions, and watch for an oral pure intrinsic-factor preparation that may replace vitamin B_{12} injections. For the present, more investigation along the indicated lines is needed so as to attract the participation of physicians whose current methods involve no failures.

* Castle, W. B.: Factors involved in absorption of vitamin B_{12}. GASTROENTEROLOGY, **37**:377-384, (Oct.) 1959.

* Herbert, V.: Current concepts in therapy: megaloblastic anemia. NEW ENG. J. MED., **268**:201-203, (Jan. 24); **268**:368-371, (Feb. 14) 1963.

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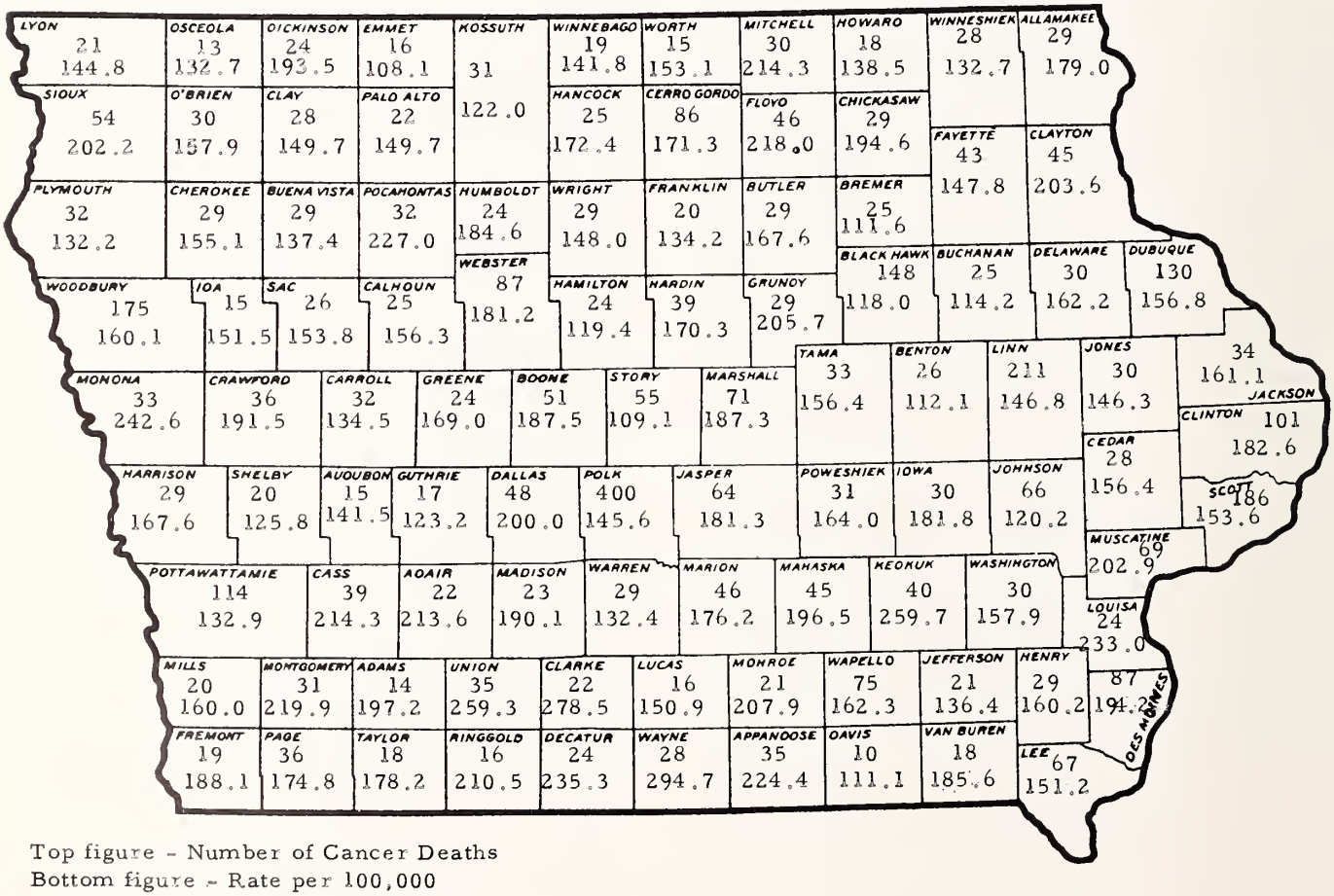
CANCER IN IOWA

The American Cancer Society, Iowa Division, Inc. will conduct its fund-raising drive from April 3 through April 10. It is appropriate for physicians to lend their support to this worthy cause, and for them to urge generous participation by the general public.

Pertinent to the drive to raise funds to combat cancer is a list of cancer deaths by site and sex among Iowa residents in 1962, compiled by the Bureau of Vital Statistics of the State Department of Health. The Bureau has also prepared a map of the state which shows the number of deaths from cancer in each county, and the death rate per 100,000 population for each county. Death from cancer is not a remote thing, for it occurs in every community in the land.

It will be noted that there were 4,448 deaths from cancer in Iowa during 1962, for an average death rate of 159.9 per 100,000 population. In a study of the map, one finds that the cancer death rate varied considerably from county to county. The cancer death rate in Emmet County was 108, in Story County 109, and in Wayne County 294.7 per 100,000. These variations can be attributed to the differences in the age distributions within the respective counties. The median age of the inhabitants of Emmet, Story and Wayne Counties are, respectively, 29.1, 24.1 and 40.1 years. The percentages of inhabitants over 65 years of age in those three counties are 11.3, 9.8 and 19.13 per cent.

There were 2,375 deaths from malignant disease among males and 2,073 among females in Iowa during 1962. Of unusual interest were the numbers of deaths in males and females from cancer at the various anatomic sites. In malignant disease of the gastrointestinal tract, deaths from cancer of the mouth and pharynx were over three times as common in men as in women. Cancer of the stomach had twice the incidence in men as in women. Cancer of the bowel was responsible for more deaths among women that among men, but death from cancer of the rectum was more frequent in males. Of the 649 deaths from neoplasms of the respiratory tract, 546 were in males and 103 in females. Among women there were 401 deaths from cancer of the breast, 213 from cancer of the uterus, 144 from cancer of the ovary, and 21 from cancer of the other genitalia. Carcinomas of the prostate caused the deaths of 304 men, and there were 16 deaths from neoplasms of other male genitilia. Though carcinoma of the prostate is common in elderly males, it is apparent that with modern therapy, many of these patients survive and succumb to the degenerative diseases rather than to cancer of the prostate. Neoplasms of the urinary



Top figure - Number of Cancer Deaths
Bottom figure - Rate per 100,000
Average State Death Rate - 159.9 per 100,000

CANCER DEATHS BY SITE AND SEX

Iowa Residents, 1962

	Males	Females	Total
Buccal cavity and pharynx	68	19	87
Esophagus	46	13	59
Stomach	181	94	275
Intestine	247	315	562
Rectum	105	76	181
Liver	79	89	168
Pancreas	144	98	242
Peritoneum	8	4	12
Unspecified digestive	5	6	11
Respiratory tract	546	103	649
Breast		401	401
Uterus		213	213
Ovary		144	144
Other female genitalia		21	21
Prostate	304		304
Other male genitalia	16		16
Urinary organs	172	85	257
Skin	37	21	58
Eye	2		2
Brain and central nervous system	58	51	109
Thyroid and endocrine glands	10	7	17
Bone	19	11	30
Connective tissue	10	6	16
Lymph nodes	2	2	4
Other and unspecified sites	57	78	135
Lymphosarcoma and reticulosarcoma	61	60	121
Hodgkin's disease	34	21	55
Other forms—lymphoma	8	8	16
Multiple myeloma	28	27	55
Leukemia and aleukemia	128	99	227
Myosis fungoides		1	1
Totals	2,375	2,073	4,448

tract resulted in death for twice as many men as women. Deaths from Hodgkin's disease, lymphoma and myeloma were about equally divided between the sexes, but deaths from leukemia were somewhat more frequent in males.

Educational campaigns which inform the public of the earliest signs and symptoms of possible neoplasms of the various body systems must be carried out over and over again if the death toll from cancer is to be reduced. Emphasis must be placed on the importance of regular complete physical examinations. Regular self-examination of the breast should be taught to women at all age levels. Cervical cytology should be a part of the routine physical examinations of all women, and biopsy in all four quadrants of the cervix is recommended if there are abnormal symptoms or if the cervix appears abnormal. Palpation of the prostate and proctoscopy must not be neglected in the physical appraisal of men over 40 years of age. Fluoroscopy or chest roentgenograms are also considered necessary in the annual health evaluation.

Earlier recognition of malignancy is one of the great hopes of every physician, regardless of his field of specialization. Generous support of the Cancer Society will contribute to this goal by promoting public education and by assuring continued research into the causes of neoplasia.

Coming Meetings

IN STATE

March 10-11 **Surgery of the Biliary Tract,** S.U.I. College of Medicine, Iowa City.

March 25 **Infertility and Endocrinology,** S.U.I. College of Medicine, Iowa City.

Apr. 4 **Orthopaedic and Rehabilitation Seminar.** Younker Memorial Rehabilitation Center, Des Moines.

Apr. 8 **Iowa Thoracic Society.** Hotel Savery, Des Moines.

Apr. 10-11 **Blank Hospital Pediatric Conference.** Auditorium, Iowa Methodist School of Nursing, Des Moines.

Apr. 24-25 **Iowa Eye Association.** State University of Iowa, Iowa City.

Apr. 26-28 **Iowa Medical Society.** Hotel Fort Des Moines and Hotel Savery, Des Moines.

CONTINENTAL U. S.

March 1-6 **Postgraduate Instructional Course in Allergy,** The Americana Bal Harbour, Miami.

March 2-3 **Seventh Annual Course in Ophthalmology,** Ohio State University College of Medicine, Columbus.

March 2-4 **Symposium on Fundamental Cancer Research,** Houston.

March 2-5 **Neurology for the Internist,** Mayo Clinic, Rochester.

March 2-5 **New Orleans Graduate Medical Assembly,** Roosevelt Hotel, New Orleans.

March 4-7 **Ocular Pathology,** University of Colorado Medical Center, Denver.

March 5-6 **Ophthalmology-Otolaryngology Symposium,** University of Oklahoma Medical Center, Oklahoma City.

March 8-11 **Missouri State Medical Association,** St. Louis.

March 9-10 **Obesity and Endocrine Problems,** University of Nebraska College of Medicine, Omaha.

March 9-11 **Pediatrics,** University of Kansas School of Medicine, Kansas City, Kansas.

March 9-13 **The Physiological Basis of Electrocardiography,** University of Utah College of Medicine, Salt Lake City.

March 15-16 **Dermatology,** Milwaukee County General Hospital, Milwaukee.

March 15-19 **International Anesthesia Research Society,** Flamingo Hotel, Las Vegas.

March 16-19 **American College of Surgeons,** Roosevelt Hotel and Jung Hotel, New Orleans.

March 16-19 **Surgery,** University of Kansas School of Medicine, Kansas City, Kansas.

March 16-20 **National Association of Recreational Therapists,** Lord Baltimore Hotel, Baltimore.

March 16-21 **Medical Technology,** University of Colorado Medical Center, Denver.

March 16-28 **Course in Laryngology and Bronchoesophagology,** University of Illinois College of Medicine, Chicago.

March 18-19 **Minor Surgery,** Marquette University School of Medicine, Milwaukee.

Mar. 19-20 **Common Skin Disorders.** University of Missouri School of Medicine and Extension Division, Columbia.

March 18-21 **American Orthopsychiatric Association,** Conrad Hilton Hotel, Chicago.

March 19-21 **American College of Sports Medicine,** Roosevelt Hotel, Hollywood.

March 20-21 **Kansas City Southwest Clinical Society, Spring Hospital Workshop Program,** Kansas City, Missouri.

March 21 **American College of Physicians (Nebraska regional),** Lincoln.

March 22-25 **California Medical Association,** Biltmore Hotel, Los Angeles.

March 23-25 **Postgraduate Course in Pediatrics,** Grady Memorial Hospital Auditorium, Atlanta.

March 25 **Symposium on Kidney Disease,** Sheraton-Chicago Hotel, Chicago.

March 25-27 **Management of Trauma,** University of Colorado Medical Center, Denver.

Mar. 30-Apr. 1 **Diagnostic Radiology,** University of Michigan Medical Center, Ann Arbor.

Mar. 31-Apr. 3 **American Association of Anatomists,** Denver.

Apr. 1-3 **American Surgical Association.** Homestead, Hot Springs, Virginia.

Apr. 1-3 **Pediatric Advances 1964.** Ohio State University College of Medicine, Columbus.

Apr. 2-4 **Current Concepts in the Physiology of Respiration, Circulation, and Electrolytes.** Atlantic City.

Apr. 3-5 **American Society of Internal Medicine.** Atlantic City.

Apr. 3-5 **American Association of Pathologists and Bacteriologists.** Drake Hotel, Chicago.

Apr. 5-6 **American Otological Society.** St. Francis Hotel, San Francisco.

Apr. 5-8 **International Academy of Pathology.** Chicago.

Apr. 6-7 **Pediatrics.** University of Nebraska College of Medicine, Omaha.

Apr. 6-8 **Ophthalmology.** University of Kansas School of Medicine, Kansas City, Kansas.

Apr. 6-9 **Spring Congress in Ophthalmology.** Patrick Henry Hotel, Roanoke.

Apr. 6-10 **American College of Physicians.** Convention Hall, Atlantic City.

Apr. 7-8 **American Broncho-Esophagological Association.** St. Francis Hotel, San Francisco.

Apr. 7-9 **American Laryngological, Rhinological and Otological Society.** St. Francis Hotel, San Francisco.

Apr. 8-10 **Otorhinolaryngology.** University of Kansas School of Medicine, Kansas City, Kansas.

Apr. 9-11 **American Association for Cancer Research.** Edgewater Beach Hotel, Chicago.

Apr. 9-11 **Endocrinology and Metabolism.** University of California Continuing Education Department, San Francisco.

Apr. 9-11 **Heart Diseases in Pediatric Patients.** University of Wisconsin School of Medicine, Madison.

Apr. 10-11 **American Laryngological Association.** St. Francis Hotel, San Francisco.

Apr. 12-15 **American Society of Maxillofacial Surgeons.** Shamrock Hilton Hotel, Houston.

Apr. 12-17 **American Physiological Society.** Morrison Hotel, Chicago.

Apr. 13-15 **Anesthesiology.** University of Kansas School of Medicine, Kansas City, Kansas.

Apr. 13-16 **American Industrial Health Conference.** Pittsburgh-Hilton Hotel, Pittsburgh.

Apr. 13-16 **Annual Scientific Assembly of the American Academy of General Practice.** Convention Hall, Atlantic City.

Apr. 19-22 **American Society of Abdominal Surgeons.** Sherman Hotel, Chicago.

Apr. 22-25 **Eighth Postgraduate Course in Trauma.** John B. Murphy Memorial Auditorium, Chicago.

Apr. 23-24 **Conference on Problems in Ophthalmology.** University of Missouri Medical Center, Columbia.

Apr. 23-25 **American Gastroenterological Association.** Sheraton Hotel, Dallas.

Apr. 23-25 **Clinical Dermatology.** University of Colorado Medical Center, Denver.

Apr. 27-28 **Society of Head and Neck Surgeons.** Peabody Hotel, Memphis.

Apr. 27-29 **American Association for Thoracic Surgery.** Queen Elizabeth Hotel, Montreal.

Apr. 27-30 **Nebraska State Medical Association.** Cornhusker Hotel, Lincoln.

ABROAD

March 8-15 **North American Cinical Dermatologic Society,** Continental Hilton and Acapulco Hilton Hotels, Mexico City.

March 17-20 **Society of Biological Chemistry,** Paris. Info: P. Malangeau, Societe de Chimie Biologique, 4 av de l'Observatoire, Paris 6e.

March 21-24 **International Congress of Cybernetic Medicine,** Naples. Info: 348 via Roma, Naples.

April 5-10 **Asia-Pacific Academy of Ophthalmology,** Melbourne, Australia. Sec-Gen: R. M. Mellar, M.D., Congress Office 82 Collins Street, Melbourne.

April 20-22 **Ciba Foundation Symposium on Disorders of Heart Muscle,** London. Info: 41 Portland Pl., London, W1.

Apr. 27-May 9 **Psychotherapy Week.** Lindau, W. Germany. Dir: Med. Helmuth Stolze, M.D., Adalbert Stifterstrasse 31, Munich 8.

May 3-8 **American Otorhinologic Society for Plastic Surgery.** West End, Bahama Islands. Sec.-Treas.: Joseph G. Gilbert, M.D., 75 Barberry Lane, Roslyn Heights, N. Y.

May 10-14 **Asian-Pacific Congress of Cardiology.** Kyoto, Japan. Info: Magoiiro Maekawa, Kyoto University Hospital, Sakyo-ku Kyoto.

May 11-14 **American Psychiatric Association and Mexican Society of Neurology and Psychiatry.** Mexico City. Info: H. J. Tompkins, M.D., 144 W. 12th Street, New York 11.

May 11-16 **International College of Surgeons.** Hofburg, Vienna. Sec.-Gen.: Horace E. Turner, M.D., 1516 Lake Shore Drive, Chicago 10.

May 18-20 **American College of Physicians (Far East Session).** U. S. Naval Hospital, Yokasuka, Japan. Info: Capt. G. M. Davis, MC, USN, Commanding Officer, U. S. Naval Hospital, Navy No. 3923, San Francisco.

May 28-31 **National Congress of Surgery.** Bucharest, Rumania. Sec.: E. Papakagi, Rumanian Society of Surgery, 8 rue Progresul, Bucharest.

President's Page



Every IMS member, I hope, will make an effort to attend the Annual Meeting of the Society, in Des Moines, April 26-29. The complete program appears on pages 95-108 in this issue of the JOURNAL.

The scientific and socioeconomic lectures, and the scientific and technical exhibits will be at the Hotel Fort Des Moines, but both the Sunday and Wednesday sessions of the House of Delegates, and the reference committee hearings, will take place at Hotel Savery.

So as to make the fullest use of the time available, luncheon meetings have been scheduled for Monday and Tuesday noons. Specialty group meetings will be held on Monday evening, and on Tuesday evening everyone is urged to attend the annual reception and banquet of the IMS, and the Woman's Auxiliary benefit dance.

If you can't spend four complete days at the Annual Meeting, spend at least one day; if you can't spend a full day, spend a few hours. You will find it well worth your time.

C. W. Edwards Sr.

President

IMS Policy-Evaluation Committee Report 1964

Majority Report

INTRODUCTION

In April, 1963 (see Supplemental Report, IMS Policy-Evaluation Committee, IMS JOURNAL, April, 1963) the Policy-Evaluation Committee, reporting on Blue Shield, made the following recommendations:

The Committee in 1963 had directed its attention to the Blue Chip Program as well as all Blue Shield contracts, and it asked that the full IMS membership study the various alternatives and that final action on Blue Chip be deferred until the meeting of the House of Delegates in 1964. It also suggested that special area meetings be held to discuss with IMS members all aspects of Blue Shield.

The House of Delegates acted favorably on the above recommendations and, in addition, asked that the Policy-Evaluation Committee develop firm recommendations regarding Blue Shield offerings to be presented to the House of Delegates in 1964.

Area meetings were held in the fall of 1963, and Blue Shield problems were presented and discussed. Subsequent to the area meetings, 23 communications were received from individual doctors, medical groups and county societies. These have been reviewed by the Policy-Evaluation Committee, as well as a synopsis of the reports on the 16 area meetings. The comments included in these letters were varied, making it impossible to draw uniform conclusions regarding them. Some of the expressions are summarized here but in no special order of importance:

1. Incorporate deductibles and co-insurance in all Blue Shield programs.
2. Establish only one Blue Shield policy with full service limit at $3,600.
3. Return Blue Shield to its original concept—or eliminate all full-service policies.
4. Implement a usual and customary fee program.
5. Convert all Blue Shield policies to the Iowa Relative Value Index (Green Book) as rapidly as possible.
6. Blue Shield should make payment for underwriting information.
7. Full-service ranges should be established on a county basis.
8. Replace the Blue Chip program with a higher service-income level program.
9. Physician anesthesiologists should be paid immediately upon submission of Blue Shield service report.
10. Make payment for x-rays in the office.
11. Physicians guilty of fraud should be prosecuted through the Iowa Medical Society.
12. Blue Shield should honor assignments.
13. Higher fees should be paid to board-certified specialists.
14. Tissues removed in office and sent to a pathologist should be paid for by Blue Shield.

A synopsis of the area meetings pertaining to Blue Shield was studied by the Committee. It follows:

1. There was considerable discussion and complaint regarding the fact that the Blue Chip contract as printed and sold is substantially different from the concept of the Blue Chip as explained to and approved by the House of Delegates. The gist of the comments and questions was that when the Insurance Commissioner insisted that the words "in the community" be added to the definition of *a* physician's usual and customary charge, and when the $5 unit was utilized as a basis of payment for almost all Blue Chip claims, these two major changes should have been *promptly* brought to the attention of the IMS.
2. There were complaints that the B300G and B450 contracts were being sold to everyone despite the House of Delegates' intent that these two contracts be limited in sales to national accounts and federal employees.
3. At almost every meeting, doctors commented that Blue Shield has departed from its original philosophy of covering the low-income group and is now covering income groups of much higher levels—while at the same time not raising the fee schedule proportionately.
4. Direct opposition to further increases in full service levels was expressed, particularly in view of administrative problems with Blue Chip.
5. Many doctors questioned whether Blue Shield really followed the recommendations of the IMS.
6. Praise or support for Blue Shield was expressed by one or two individuals at four meetings, and at a fifth one a group of nine physicians expressed overall support with comments such as: "We have no problem with Blue Shield" and "Blue Shield is a good deal."
7. "Blue Shield has the lowest administrative cost of all the insurance companies, and no other company could match it."
8. "Blue Shield is a good program; if all doctors were to follow a $5 Gray Book unit, there wouldn't be much of a problem."
9. "Why shouldn't Blue Shield go into the insurance business and protect our interests?" (This was in answer to a comment that Blue Shield should be restricted to low-income groups.) "One of the prime advantages of Blue Shield is doctor sponsorship and full

service. You should be careful not to limit yourselves too much; remember that the people like this. Don't force patients to do something they don't want to do. We will not please patients by offering indemnity programs. Let's not sell our Blue Shield program down the river."

10. At every meeting there were questions such as: (1) Who controls Blue Shield? (2) How are the members of the Board chosen, nominated and elected? (3) How can we be assured of a voice in Blue Shield? Several doctors commented that these meetings, in effect, would do little good, and that Blue Shield would go its own way. It was evident that many were not convinced that Blue Shield is really "the doctor's plan."

11. Many doctors suggested that Blue Shield should make more of an effort to utilize deductible contracts as a means of: (1) reducing over-utilization as well as the high premium costs, and (2) educating the patient to his "stake" in the cost.

12. There were a variety of complaints about the sales force for things such as: (1) poor attitude, (2) over-selling, and (3) interference with doctor-patient relationships on full-service matters.

13. At every meeting, doctors suggested that Blue Shield offer outpatient and office diagnostic coverage as a means of lowering hospital utilization, in the first place, and of encouraging the private practice of medicine in the second place.

14. At almost every meeting, there were complaints from doctors that Blue Cross-Blue Shield sends out too many inquiries such as: "Was this admission primarily for diagnostic reasons?"

15. Several doctors questioned the need for "doctors to be in the insurance business" and felt that commercial insurance companies are now doing such a good job that there is no real need for Blue Shield.

16. Many doctors expressed the opinion that Blue Shield is primarily a surgeon's plan, and that internists, pediatricians, etc., are discriminated against.

17. Many doctors commented generally that Blue Shield fee schedules have not kept pace with inflation.

18. Several doctors expressed their willingness to accept full service for low-income patients, but beyond that they maintained Blue Shield should be indemnity.

19. Several anesthesiologists complained that Blue Shield discriminates against them in promptness of payment. They felt Blue Shield should pay their claims without waiting for the surgeon's report.

20. Several doctors felt many problems would be eliminated if Blue Shield sent its checks directly to the patient instead of to the doctor.

21. Several questions were asked as to when Blue Shield is going to adopt the Green Book for all contracts, as recommended by the House of Delegates.

22. Several doctors commented that there should be a net-worth clause in all contracts.

23. A question was raised about the status of the major medical plan being developed by Blue Shield, as announced by a Blue Shield representative at the September 18, 1963, IMS Fall Conference.

24. Officials of the IMS commented that though there has been a serious breakdown in communications between Blue Shield and the IMS, the fault has not been entirely on one side. Further, these officials urged that the membership maintain a positive, not negative, viewpoint when writing their suggestions and comments to the Policy-Evaluation Committee.

COMMENTS ON THE BLUE CHIP CONTRACT

Blue Chip was first sold in 1957, and there were 14,948 contracts in force by the end of 1963. The Blue Chip contract, as it was originally understood by IMS members, was to be a full-service, no-income-limit plan wherein participating physicians would be paid their customary, reasonable and usual fees for services rendered.

Subsequent developments between Blue Shield and the Iowa Insurance Commissioner resulted in a requirement by the Commissioner that Blue Shield incorporate more restrictive language in the Blue Chip contract than was originally contemplated by the House of Delegates. As a result, the clauses "by others" and "within the community" were included in the Blue Chip contract. The Policy-Evaluation Committee has been advised that a $5 coefficient has since been used in screening Blue Chip claims. Furthermore, until recently the Iowa Unit Fee Index (Gray Book) was utilized as a basis for computing fees, but now the latest edition of the Iowa Relative Value Index (Green Book) is in effect.

We understand that Blue Chip claims are now administered as follows: If a physician bills Blue Shield for a fee in excess of what Blue Shield determines to be the usual and customary fee in the community (generally screened at $5.00 per unit—Green Book) and in the absence of medical and/or surgical complications, he is paid this allowance. If he is not satisfied with the reduction in his fee, and so advises Blue Shield officials, then his claim is reopened and referred to the Blue Shield Claims Committee for further consideration.

Generally speaking, Blue Chip payments have been accepted, or have gone unchallenged by a majority of the participating physicians. The Policy-Evaluation Committee is informed that the Blue Shield Claims Committee considers approximately thirty Blue Chip claims at each of its sessions, which occur generally monthly.

In December, 1963, eleven hundred Blue Chip claims were screened. Of these charges, 97.7 per cent were paid and not questioned by Blue Shield or the doctor, and 2.3 per cent required Claims Committee attention.

Following the Policy-Evaluation Committee meeting on January 16, 1964, members of the Board of Trustees and Blue Shield met with the Insurance Commissioner on February 3, 1964, to consult about more latitude in the payment of Blue Chip claims, etc. The Insurance Commissioner indicated that his office is primarily interested in the overall cost of any Blue Shield program and not in the amount of the fee paid to a particular physician for a specific service. He advised that the first step in altering the administration of the present Blue Chip program would be to convince the Blue Shield Board of Directors that such a change would be prudent. If the Blue Shield Board of Directors were to present a proposal to the Insurance Commissioner wherein a physician would be paid

his usual and customary fee with appropriate fiscal safeguards, the Office of the Commissioner would give it every consideration.

For the majority of Iowa Blue Shield participating physicians, the Blue Chip coverage and range of fees seem satisfactory for common medical and surgical illnesses, and the fees appear to be commensurate with the services rendered.

Although Blue Chip departs from the basic concept of Blue Shield—full service for specific income limits—the majority of Blue Chip subscribers are not in the upper income brackets; only a few have high incomes.

According to Blue Shield spokesmen, Blue Chip is not acceptable to doctors in a few medical subspecialties. Their dissatisfaction is basically with the Iowa Relative Value Index and its use in computing allowances under the Blue Chip contract.

Under these circumstances, the Committee suggests that in the absence of suitable alternatives, the physicians in these specialties give serious consideration to withdrawing as Blue Shield participating physicians. The Blue Shield allowances would then be paid to the Blue Shield subscriber, and the subscriber and his non-participating physician could then make their own financial arrangements without interference by a third party.

The Policy-Evaluation Committee therefore recommends that the Blue Chip contract be maintained, and that continuing efforts be made to convince the Blue Shield Board of Directors that a program which pays the physician his usual, customary and reasonable fee is in the best interests of the recipient, the physician and Blue Shield.

CONSIDERATION OF OTHER CONTRACTS

A250 Contract: ($3,600 family maximum income limit) Yellow book—66,071 contracts.

This contract is no longer for sale to new subscribers, and it will be discontinued as rapidly as possible. This discontinuation continues to be encouraged.

B300 Contract: ($2,400 single—$3,600 family) Red Book at $3 per unit. 116,239 contracts in force.

The Policy-Evaluation Committee recommends that the B300 contract be replaced with the B300G contract ($2,800 single—$4,000 family. Gray Book at $3 per unit). This change from $3,600 to $4,000 family income level would increase physician payments by 16 per cent, since payment under the contract would be computed on the basis of the Gray Book instead of the Red Book. It also recommends that a net worth clause of $40,000 be placed in the contract.

B400 Contract: ($5,400 family maximum full service—Net worth $54,000) Gray Book at $4 per unit. 46,193 contracts in force.

Should the B450 contract replace the B400? (The B450 has full service income limits of $4,000 single and $6,000 family; physicians are compensated at $4.50 Gray Book; 9,586 contracts are in force.)

The Policy-Evaluation Committee recommends this change. The B450 was first sold to federal employees and national accounts. The Reference Committee in 1961, because of Insurance Department requirements, did not approve limiting the sale to just certain groups. The Reference Committee on Insurance and Medical Service in 1963 made the following recommendation, which was adopted by the House of Delegates:

"Your Reference Committee wishes to comment further on one portion of the Policy-Evaluation Committee Report. That section of the report concerning contracts B300G and B450 for federal employees and national accounts suggests that this program could replace the existing B300 and B400 contracts. We understand that at the present time, the B300G and B450 contracts are not being promoted for sale to individuals. Your Reference Committee is of the opinion that the House of Delegates, when it approved in 1961 the higher income levels which permitted the development of these contracts, intended that this sale be limited to federal employees and national accounts. It has been pointed out that legally the sale of any contract cannot be limited, and although the B300G and B450 contracts are not at present being promoted publicly, they are available to other than national accounts and federal employees. Your Reference Committee recommends that this policy of no public promotion be maintained until a year's study at the county level on the relationship of these four Blue Shield policies —B300, B300G, B400 and B450—is completed."

It is now clear that the intent of the House of Delegates, when it approved the federal employee and national account programs in 1961, was that the sale of these plans be limited to these groups, except on request.

B450 Contract: After careful study of the "medium family income level" for families in the United States and other factors, the Policy-Evaluation Committee feels that $6,000 family income should be the maximum full-service level and a net worth clause of $54,000 should apply.

Senior 65 Contracts: Two contracts now in force: *Iowa Senior 65:* ($3,000 two persons—$2,000 single) 9,394 contracts. Net worth clause $30,000 —30 day coverage—Red Book at $3 per unit. *National Senior Citizen:* ($2,500 single—$4,000 family) 70-day coverage. No net worth clause. Gray Book at $3 per unit.

The Committee recommends making these contracts uniform as to service-income levels ($4,000 maximum family income) and net worth ($30,000) and basing payments on the Gray Book with an option to purchase either 30- or 70-day coverage.

Major Medical Contracts:

In 1961 the Policy-Evaluation Committee recom-

mended that a major medical contract be developed. This concept was approved by the House of Delegates. The Policy-Evaluation Committee understands that this type of coverage was first sold November 1, 1962, as a supplement to the B450 contract for federal employees. The Policy-Evaluation Committee has not taken any action regarding approval or disapproval of this additional coverage for federal employees.

In 1963 the Policy-Evaluation Committee, again in its Supplemental Report to the House of Delegates, stated that "the Committee is informed that Blue Shield is in the process of developing a major medical policy and it wishes to encourage Blue Shield in this undertaking. It is hoped that this coverage will be available in Iowa in the near future." This recommendation was also approved by the House of Delegates in 1963.

The development of this new major medical policy has been delayed for several reasons. Among them are:

1. A question about the meaning of "physician." It has been ruled by the Insurance Commissioner that the term "physician" includes only M.D.'s and D.O.'s, as in other Blue Shield contracts.

2. The IMS Executive Council on November 21, 1963, recommended that the major medical contract not be sold until Iowa doctors could be informed as to its nature and until action is taken by the House of Delegates in 1964. The Policy-Evaluation Committee agreed with the action of the Executive Council. The Blue Shield Board of Directors has agreed to hold in abeyance the sale of this contract until after the 1964 House of Delegates meeting.

Blue Shield has suggested the following language, excerpted from the proposed major-medical certificate, as the most descriptive of the program:

ARTICLE I—DEFINITION OF TERMS

7. "Covered Medical Benefits" means reasonable and necessary charges incurred by a Member on or after the effective date of this Certificate, for an illness or accidental injury but only if performed or prescribed by a Physician subject to the exclusions and limitations set forth in Article III, for the following:

(a) Service of Physicians;
(b) Bed and board, including special diets, and general nursing service in a hospital except for the per diem charges over $20.00;
(c) Use of operating or treatment room;
(d) Anesthetics and administration thereof;
(e) X-ray and diagnostic laboratory procedures;
(f) Radiation therapy;
(g) Oxygen and its administration;
(h) Blood transfusions, including cost of blood, blood plasma and blood plasma expanders;
(i) Drugs, medicines and dressings used in a hospital and prescription drugs and prescription medicines purchased for use outside a hospital;
(j) Services of a qualified professional physical therapist;
(k) Services of an actively practicing nurse, as follows:
(i) In a hospital, services of a registered professional nurse (R.N.), and services of a licensed practical nurse (L.P.N.);
(ii) Other than in a hospital, services of a registered professional nurse (R.N.);
(l) Rental of iron lung or other durable equipment required for temporary therapeutic use;
(m) Professional ambulance service used locally to or from the hospital except in connection with outpatient care of non-accidental illness;
(n) Prosthetic appliances necessary for the alleviation of or correction of conditions arising out of accidental injury occurring or illness commencing on or after the Member's effective date of coverage hereunder.

8. Benefit Period

(a) "Benefit Period" except as limited in sub-paragraph (c) below means a period of 365 consecutive days commencing on the first day on which a Member is under the care of a physician for the treatment of any covered illness or injury.
(b) The first Benefit Period shall commence on the effective date of coverage for a Member provided, however, that for any condition existing prior to the effective date of coverage for a Member, the first Benefit Period for such condition or conditions related thereto shall commence only following the expiration of at least ninety (90) consecutive days from the effective date of such Member's coverage under this contract and during which time no expenses for the services included under Covered Medical Benefits were incurred on account of said Member.
(c) A Benefit Period will terminate upon the expiration of 90 consecutive days during which no charge for Covered Medical Benefits were incurred on account of said Member.
(d) A new Benefit Period shall commence for a Member while covered hereunder upon the expiration of his preceding Benefit Period, except as limited in Article II.
(e) A Covered Medical Benefit shall be deemed to have been incurred on the date the services or supplies for which the charge is made have been rendered or received.

9. Deductible Amount

(a) "Deductible Amount" means $100. Covered Medical Benefits under this certificate shall only be payable in excess of those available under the Basic Certificates plus $100 as to each Member in each benefit period except as provided in sub-paragraph (b) of this paragraph 9.
(b) In the event two or more Members under this contract incur expenses hereunder as a result of injuries received in the same accident, only one deductible shall be applied to the aggregate of all expenses for covered medical benefits which are incurred by all such Members as a result of injuries received in the same accident.

ARTICLE II—BENEFITS PROVIDED

If a Member shall incur Covered Medical Benefits commencing while covered hereunder, in excess of the Deductible Amount determined pursu-

ant to Article I, Paragraph 9, then subject to the exclusions and limitations set forth in Article III, The Plans agree to pay said Member 80 per cent of the amount of such excess expenses actually incurred by the Member. The maximum liability of The Plans per Benefit Period to a Member hereunder shall be to pay on account of its aforesaid percentage of the excess of all Covered Medical Benefits incurred in a Benefit Period up to the sum of $5,000. When a Member has received $10,000 for Covered Medical Benefits incurred in two or more Benefit Periods (whether covered by this Contract alone or by this Contract and any prior Major Medical Contract issued by The Plans), then this Contract shall be terminated as to such Member unless proof of insurability satisfactory to The Plans is provided by the Member.

ARTICLE III—EXCLUSIONS AND LIMITATIONS

No benefits shall be provided hereunder on account of:

1. Services or supplies for any occupational condition, ailment, or injury arising out of and in the course of employment by another, including Workmen's Compensation Benefits, or services or supplies which are furnished without cost to a Member under the laws of the United States or of any state or political subdivision thereof, and in no event for services or supplies provided by the United States Veterans Administration.

2. Disease contracted or injuries sustained as a result or war, declared on undeclared, or any act of war.

3. Subject to the provisions of Article I, Paragraph I, dental care and treatments, dental surgery or dental appliances unless such charges result from accidental bodily injury occurring while the Member is covered hereunder.

4. Eyeglasses or hearing aids or examinations for the prescription or fitting thereof.

5. Services or supplies for cosmetic purposes, except for the correction of defects incurred through accidental bodily injury sustained by the Member while covered hereunder.

6. Services or supplies not incidental to the treatment of injury or sickness.

7. Services for mental disorders outside of a hospital or in the out-patient department of a hospital.

8. Services or supplies rendered for childbirth, abortion, miscarriage, Cesarean section, prenatal or postnatal care, or for routine care of a newborn infant.

9. Travel, whether or not recommended by a physician.

10. Convalescent, custodial or sanataria care or rest cure.

11. Services or supplies not specifically listed as Covered Medical Benefits in Article I, Paragraph 7.

12. The total of the expenses for services and supplies enumerated as Covered Medical Benefits in Paragraph 7 of Article I, which are incurred during each Benefit Period in connection with the illness or injury of any Member while such Member is covered under this contract to the extent that such services and supplies are provided the Member under or by any one or more of the following situations in respect of which such Member shall have received or has had paid for him, all or a portion of the cost thereof:

(a) any group insurance or prepayment benefits of any kind or nature;

(b) any benefits under any Blue Cross or Blue Shield Certificates basic hereto;

(c) any benefits under any state or governmental plan or law.

(This ends the quotation from the proposed Blue Shield Major Medical Certificate.)

The representatives of the IMS and Blue Shield in their recent meeting with the Iowa Insurance Commissioner also discussed the provision of the major medical contract wherein a physician is to be paid "reasonable and necessary charges." The Commissioner has agreed to provide the IMS with an interpretation of this provision, and his interpretation will be available prior to or at the time of the 1964 House of Delegates meeting.

Latest Edition, Iowa Relative Value Index (Green Book): In August, 1962, the Policy-Evaluation Committee recommended that all Blue Shield contracts be converted to the Green Book as rapidly as possible. At its March, 1963, meeting, the Committee reiterated that statement. It is informed that this conversion is being carried out by Blue Shield. This action will make the Blue Shield program much more understandable to subscribers, doctors, and their office assistants.

COMMENT

The provision of quality and quantity health care is still the chief concern of Iowa doctors and all other physicians. Health and accident insurance on a voluntary basis is one method of financing this care, and is the chief weapon to combat the federalization of health care in the United States. It is important that adequate, voluntary health insurance contracts be made available by the Blue Plans and the commercial companies at premiums *within* the purchasing power of the subscriber. The Blue Plans in the past two decades have provided the leadership and the stimulus to the commerical companies in developing adequate coverage. Thus, doctors and hospitals must continue in the prepayment health care business for the foreseeable future.

POLICY-EVALUATION COMMITTEE RECOMMENDATIONS

1. Continue to negotiate with the Blue Shield Board of Directors with the ultimate objective of obtaining implementation of a Blue Chip program that will pay a physician his usual, customary and reasonable charge with necessary safeguards to protect the fiscal soundness of the program.

2. Discontinue the A250 contract as rapidly as possible.

3. Replace B300 ($3,600 family) contract—$3 unit Red Book—with B300G contract ($4,000 family)—$3 unit Gray Book—and add a net worth clause of $40,000.

4. Replace B400 ($3,600 single—$5,400 family—$54,000 net worth clause)—$4 Gray Book—with B450 ($4,000 single—$6,000 family)—$4.50 Gray Book. Apply net worth clause of $54,000. For legal reasons this net-worth clause could not apply to the federal employees' program. Authorize Blue Shield to promote sale of B450 program to all eligible groups and individuals.

5. Approve sale of major medical contracts as a supplement to all basic Blue Shield contracts.

6. Make the special contracts for the aged uniform ($2,500—$4,000—30 to 70 day option—$30,000 net worth clause—$3 Gray Book).

7. Convert all plans to Green Book.

8. Continue close liaison between IMS and Blue Shield.

W. L. DOWNING, M.D., *Chairman*
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ADDENDUM

Subsequent to its January 16, 1964, meeting, the Committee was informed of a communication from the National Association of Blue Shield Plans to Iowa Medical Service regarding proposed changes in the federal employees' program. On December 1, 1963, the Executive Committee of the National Association of Blue Shield Plans, at the request of the Civil Service Commission, voted to recommend that the high-option income level on the federal employees' contract be increased from $6,000 to $7,500 for family coverage.

According to the Civil Service Commission, a study revealed "that $7,500 would be necessary to maintain the principle of providing service benefits to three-quarters of federal employees."

The above National Blue Shield Executive Committee action was forwarded to the Board of Directors of National Blue Shield requesting that they concur in the action. The change in the contract, if approved, would become applicable on November 1, 1964. To this date, no information has been received as to the action of the National Association of Blue Shield Plans Board of Directors.

Earlier in this report, the action of the House of Delegates taken in 1961 when it approved the federal employees' program was outlined. If a program is approved for federal employees, it must also be available upon request to other groups and/or individuals. Thus, if Iowa Medical Service (Blue Shield) is to be eligible to sell contracts to federal employees, the B450 contract income limit (high-option family coverage) would have to be raised from $6,000 to $7,500. The Policy-Evaluation Committee has not had time to act on this matter since its report had been prepared for publication in the March issue of the JOURNAL OF THE IOWA MEDICAL SOCIETY prior to receipt of this information.

Two courses of action are open to the 1964 House of Delegates:

1. Increase the service income limit (high-option) B450 contract for federal employees, and upon request to all other groups, to the $7,500 income level. Obviously this would necessitate an increase in the unit value applicable to the B450 contract.

2. Keep the B450 contract service income limit at $6,000 and not participate in underwriting the proposed $7,500 service income level program for federal employees.

ADDENDUM II

The Policy-Evaluation Committee was notified on February 11, 1964, by letter from Iowa Medical Service, that the Board of Directors of the National Association of Blue Shield Plans at its meeting on January 25-26, 1964, voted to concur in the recommendation of its Executive Committee that the family service income levels on the high-option Federal Employee Program be increased to $7,500 effective November 1, 1964.

Minority Report

While agreeing with the major portion of the Policy Evaluation Committee's majority report, the undersigned members of the Committee dissent from the recommendation to continue negotiations on the Blue Chip plan. It is our recommendation that the Blue Chip program be discontinued, for the following reasons:

a) The relatively high incidence of problems arising in administration of Blue Chip. Both physicians and patients have complained about interpretation of the contract to the point where most of the claims reaching the Blue Shield Claims Committee arise out of Blue Chip policies.

b) The Blue Shield concept involves widespread participation by the practicing physicians of the state. No policy can serve the best interests of Blue Shield, the profession, or the public if it is so difficult of administration that the Policy Evaluation Committee majority report suggests the withdrawal from Blue Shield of all physicians in particular sub-specialties in order to solve their fee problem.

c) The major objectives of the Blue Chip concept are maximum protection for the policyholder, and protection of the physician's right to charge his usual, customary, and reasonable fee. These objectives can be met by the proposed new major medical contract, without the built-in sources of friction and misunderstanding present in the current Blue Chip policy.

H. J. SMITH, M.D.
G. M. WYATT, M.D.

THE JOURNAL *Book Shelf*



BOOK REVIEWS

CLINICAL DISORDERS OF IRON METABOLISM, by *Ernest Beutler,* M.D., *Virgil F. Fairbanks,* M.D., and *John L. Fahey,* M.D. (New York, Grune & Stratton, Inc., 1962. $8.75).

"Iron deficiency anemia is probably the most common clinical disorder seen in clinical medicine . . . and . . . there are a few disorders . . . in which the results of specific therapy are so dramatic and predictable. . . ."

Exposed to Dr. Beutler's clinic and laboratory oriented monograph, the reader, according to his area of special competence, is disquieted and perhaps educated in reading (1) that Granich's classic and well elucidated mechanism of transmucosal iron transport is, by recent observation, passè, (2) that diagnostic observation of the stained peripheral smear is frequently inadequate, and (3) that ferrous sulfate at $0.68 per month has, in well controlled studies, been shown to be as efficacious and no more productive of gastrointestinal side effects than a much-used proprietary at $9.25 per month.

Ernest Beutler is chairman of the Department of Medicine and director of the Hospital for Blood Diseases at the City of Hope Medical Center, Duarte, California. When known and admired by the reviewer, he was the superior member of the flairful group of young hematologists who were protégés of Dr. Leon Jacobson at the University of Chicago Clinics in the early 1950's. His monograph, in 248 literarily good pages, summarizes the physiologic, diagnostic, and therapeutic aspects of iron metabolism contained in his 845 tabulated primary sources.—*Ralph R. Stephens,* M.D.

PEDIATRIC CARDIOLOGY, SECOND EDITION, by *Alexander F. Nadas,* M.D. (Philadelphia, W. B. Saunders Company, 1963. $18.00).

Dr. Alexander Nadas has enlarged, improved, and considerably expanded his PEDIATRIC CARDIOLOGY for this second edition. The tools of diagnosis, acquired heart disease and congenital heart diseases are the three main divisions of the volume.

The first section which covers the methods of cardiac diagnosis, range from important points in the history to the intra-cardiac pressure interpretations. It gives a complete verbal and graphic picture of the various avenues which the cardiac diagnostician may take.

Part two deals with such acquired diseases as rheumatic fever, subclinical bacterial endocarditis, myocardial and pericardial disease, and the arrhythmias. Diagrams showing the cardiac pathophysiology are included, and there are discussions of the basic modes of investigation such as the EKG and x-ray.

Division three is an admirable dissertation on the oft-times poorly understood congenital heart lesions. Dr. Nadas takes a well organized approach to these congenital lesions by discussing each one from the aspects of incidence, anatomy, physiology, clinical picture, differential diagnosis, prognosis, and treatment.

This book will be useful as a text and a reference, and will be most beneficial to the practicing pediatrician or the general practitioner with a sizeable pediatric practice. It is, of course, a must for the shelf of the cardiologist.—*J. E. Gustafson,* M.D.

CROSSEN'S SYNOPSIS OF GYNECOLOGY, SIXTH EDITION, by *Daniel Winston Beacham,* M.D., and *Woodward Davis Beacham,* M.D. (St. Louis, The C. V. Mosby Company, 1963. $7.50).

The sixth edition brings this synopsis up to the minute. It has 360 pages of authorative presentations covering the current status of virtually every topic of clinical significance in obstetrics and gynecology.

The abbreviations and omissions necessary in synopsizing such a tremendous volume of material are somewhat compensated for by an extensive list of selected references to the literature, through 1962.

The illustrations, diagrams, black and white photographs and even a few color photographs are well done.

If a synopsis can be worthwhile, this one certainly is. —*Richard M. Moore,* M.D.

ATOMIC ENERGY ENCYCLOPEDIA IN THE LIFE SCIENCES, ed. by *Charles W. Shilling,* M.D. (Philadelphia, W. B. Saunders Company, 1964. $10.50).

This book is an encyclopedia and a dictionary of facts, particularly concerning the peaceful uses of atomic energy. It is designed primarily for the use of hospital and college students, practicing physicians and research scientists. It contains 1,200 alphabetically arranged entries, including 198 on radiation, 139 on elements and isotopes, 87 on somatic affects, 89 on health protection, and 147 on radioisotope uses.

It is a book which would be a worthwhile addition to school and hospital libraries which need definitions and references to particular subjects concerning atomic energy.—*James T. McMillan,* M.D.

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BOOKS RECEIVED

APPRAISAL OF CURRENT CONCEPTS IN ANESTHESIOLOGY, VOL. II, ed. by *John Adriani,* M.D. (St. Louis, C. V. Mosby Company, 1964. $10.75).

MEDICAL PHARMACOLOGY, SECOND EDITION, by *Andres Goth,* M.D. (St. Louis, C. V. Mosby Company, 1964. $11.75).

CURRENT DIAGNOSIS & TREATMENT, by *Henry Brainerd,* M.D., *Sheldon Margen,* M.D. and *Milton J. Chatton,* M.D. (Los Altos, California, Lange Medical Publications, 1964. $9.50).

PRINCIPLES OF PUBLIC HEALTH ADMINISTRATION, FOURTH EDITION, by *John J. Hanlon,* M.D. (St. Louis, C. V. Mosby Company, 1964. $11.50).

DRUGS OF CHOICE 1964-1965, ed. by *Walter Modell,* M.D. (St. Louis, C. V. Mosby Company, 1964. $16.75).

SURGICAL PATHOLOGY, THIRD EDITION, by *Lauren V. Ackerman,* M.D. (St. Louis, C. V. Mosby Company, 1964. $18.75).

CURRENT PEDIATRIC THERAPY, by *Sydney S. Gellis,* M.D. and *Benjamin M. Kagan,* M.D. (Philadelphia, W. B. Saunders Company, 1964. $16.00).

AMA Congress on Environmental Health

The American Medical Association will sponsor the AMA Congress on Environmental Health Problems, May 1 and 2, at the Sheraton-Chicago Hotel, in Chicago. The theme of the Congress is a question: "Can Some Diseases Be 'Engineered' Out of the Environment?" The program will center on four main areas of environment that have been related to health—air pollution, water pollution, pesticides and radiation.

James H. Sterner, M.D., chairman of the AMA Committee on Environmental Health and medical director of Eastman Kodak Company, Rochester, New York, will deliver the keynote address on the topic "The Medical Profession Looks at Environmental Health." Los Angeles architect Welton Beckett, the luncheon speaker on May 1, will discuss the role of the builders in creating environment. John A. Zapp, Ph.D., director of the DuPont Company's Haskell Laboratories for Toxicology and Industrial Medicine, Wilmington, Delaware, will speak at the luncheon on May 2 on "Perspectives on Industry and Environmental Health."

The morning session of the first day will be on air pollution. It will take up the extent of human exposure to air pollution; acute and chronic effects; evaluation of effects in clinical situations; community control; and the physician's role.

A half-day session on pesticide hazards will review the much-disputed health hazards posed by these agents, and will take up the possible legal safeguards against their misuse.

A session on radiologic hazards will take up the biologic effects of radiation, along with standards for radiation protection, and radionuclides as soil and water contaminants.

Eighth Annual Blank Hospital Pediatric Conference

The Eighth Annual Raymond Blank Hospital Pediatric Conference will be held on April 10 and 11, 1964, in the auditorium of the Iowa Methodist School of Nursing, Des Moines, under the sponsorship of the Raymond Blank Hospital Association, the Raymond Blank Hospital Guild, the Division of Maternal and Child Health of the Iowa State Department of Health, the Iowa Pediatric Society and the Iowa Branch, American Academy of Pediatrics. The registration fee for the entire conference is $30, which includes luncheon tickets and one banquet ticket. Registration for one day is $15.

The principal items on the program are as follows:

Friday, April 10

9:15 a.m. THE EIGHTH LEE FORREST HILL LECTURESHIP: "Muscle Disease in Childhood"—Randolph K. Byers, M.D., professor of pediatrics, Harvard University, The Children's Medical Center, Boston

10:45 a.m. "Iron Deficiency Anemia"—M. Eugene Lahey, M.D., professor of pediatrics, University of Utah College of Medicine, Salt Lake City

12:00 m. LUNCHEON

1:30 p.m. CASE PRESENTATIONS—Residents of the Raymond Blank Memorial Hospital for Childen

2:30 p.m. "Respiratory Syncytial Virus Infection in Children"—F. Howell Wright, M.D., professor of pediatrics, The University of Chicago, Bob Roberts Memorial Hospital for Children, Chicago

4:00 p.m. "The Short Child: Diagnosis and Treatment"—Robert M. Blizzard, M.D., associate professor of pediatrics, Johns Hopkins University, Baltimore

5:00 p.m. BUSINESS MEETINGS: Iowa Pediatric Society and Iowa Branch, American Academy of Pediatrics

6:30 p.m. SOCIAL HOUR AND BANQUET—Des Moines Club

Saturday, April 11

9:00 a.m. "Thyroid Disorders in Children"—Dr. Blizzard

10:00 a.m. "Genetic and Epidemiologic Aspects of Acute Leukemia in Children"—Dr. Lahey

11:15 a.m. "Cerebral Palsy"—Dr. Byers

12:00 m. LUNCHEON

1:30 p.m. CASE PRESENTATIONS—Residents of the Raymond Blank Memorial Hospital for Children

3:15 p.m. "Use and Abuse of the Pediatrician-Parent Relationship"—Dr. Wright

Iowa Association of Medical Assistants

Eternal Vigilance

Our title sounds war-like, and in a sense we are at war—war against the greatest foe of the private practice of medicine, legislation to provide medical care to the aged under the Social Security Program. We know this proposal as the King-Anderson Bill, or H.R.-3920—The Hospital Insurance Act of 1963, 88th Congress.

Nell G. Thomas, AAMA Legislative Committee Chairman, in a recent letter to presidents of state medical assistant societies, says, "It is well we find time to reflect on the blessings we enjoy as citizens of this great nation. The outstanding priviliges we possess and enjoy are those of being able to choose our places of residence, our way of worship, the method by which we earn our livelihood, the amount of education we may acquire, not only in youth but throughout an entire lifetime, and the right to choose our family physician, specialists and where we will receive our medical care."

Mrs. Judy Coleman and Miss Alice Budny, president and immediate past-president of the American Association of Medical Assistants, testified before the House Ways and Means Committee in Washington, D. C., on November 21, 1963. They presented AAMA's views in opposition to this proposed legislation; the AMA's two top officers, Dr. Edward R. Annis and Dr. A. Welch, also testified in opposition to the same Bill. Testimony before the House Ways and Means Committee was temporarily discontinued on the following day because of the tragic and untimely death of President Kennedy. President Johnson has adopted many of the goals set by President Kennedy, and his administration will endeavor to attain passage of H.R.-3920.

We have said it before, but the situation has not changed and we repeat: Our senators and representatives must know our views and wishes in order to vote as we want them to vote. A Congressman's first obligation is to his constituents! If we do not inform them of our beliefs and wishes they are free to assume that we are in accord with our opponents, and to vote accordingly. If as medical assistants and private citizens, we fail to do our individual duty in opposing this type of legislation, we are, figuratively speaking, casting a vote in its favor.

Letters should be addressed as follows:

SENATORS:	REPRESENTATIVES:
Senator ..(full name)..	Hon. ....(full name)....
United States Senate	House of Representatives
Washington 25, D. C.	Washington 25, D. C.
Dear Senator .....:	Dear Mr. .....:

In writing, keep these points in mind:

1. Be sincere; use your own words and your own style

2. Be courteous—a compliment is appreciated

3. Keep your letters brief

4. Give one or two reasons for your views; avoid emotion

5. Be straightforward; say what you are for or against

6. Offer to give him more information if he wants it

7. Request him to vote against King-Anderson Bill, H.R.-3920, 88th Congress.

One of two of the following may be included in your letter:

1. There is no demonstrated need for such legislation.

2. Help should be given to those who need it, but not to those who are able to take care of their own needs.

3. The King-Anderson Bill would seriously lower the quality of medical care.

4. It would result in the overcrowding and over utilization of hospitals by those who could be better cared for at home.

5. It would limit the patient's free choice of a hospital to just those institutions that sign agreements with the government, and to physicians who practice in these hospitals.

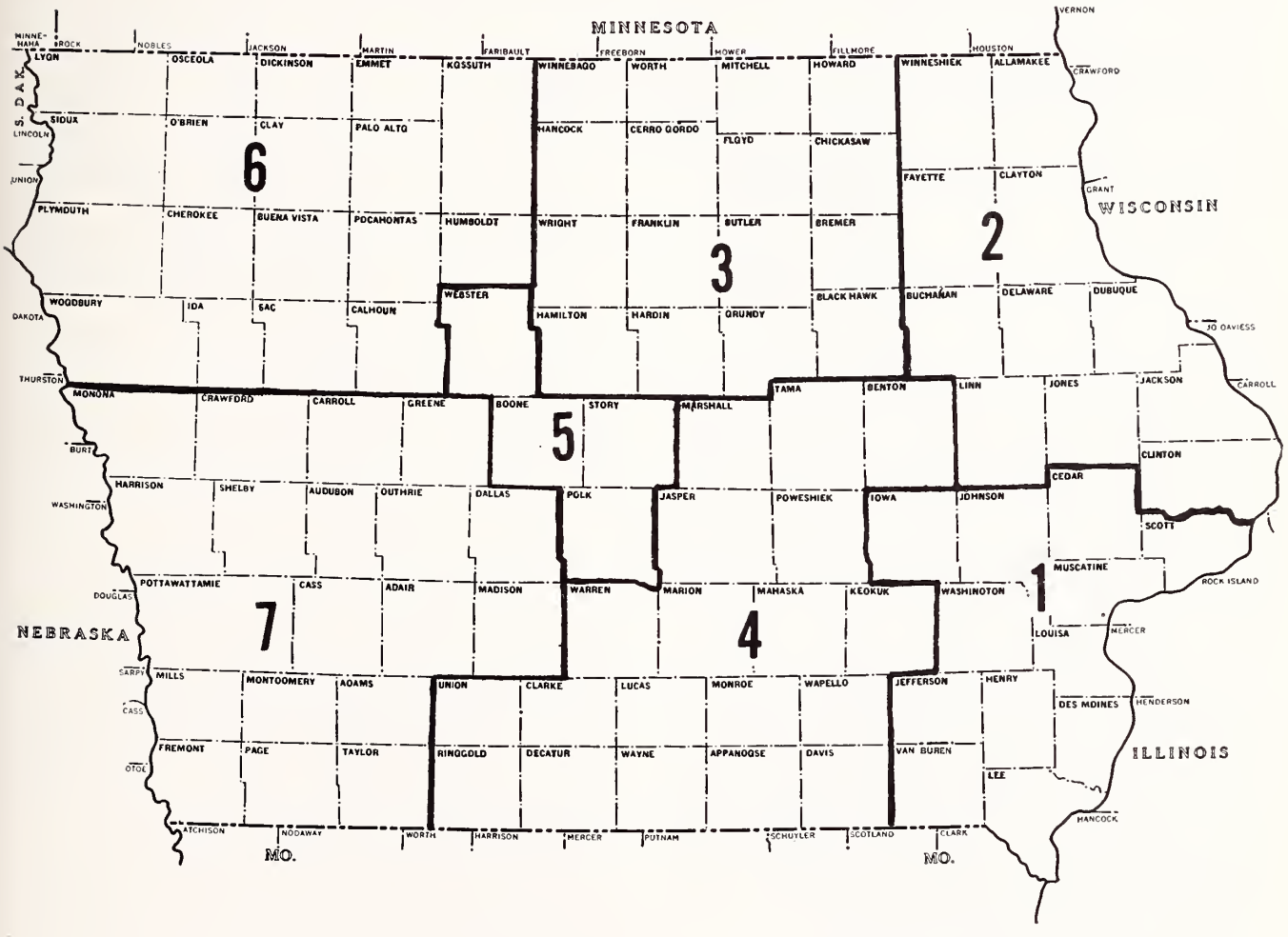
7. The total cost of such a program would be staggering.

8. It would lead to a decline, if not to the end, of voluntary health insurance programs.

9. It would produce a system which inevitably would be expanded into a full-fledged program of socialized medicine for everyone.

10. It would mean a further cut in take-home pay because of a substantial increase in Social Security taxes.

Map of Iowa Congressional Districts



SENATORS

Bourke B. Hickenlooper (R)

Jack R. Miller (R)

REPRESENTATIVES

District 1. Fred Schwengel (R)

District 2. James E. Bromwell (R)

District 3. H. R. Gross (R)

District 4. John H. Kyl (R)

District 5. Neal Smith (D)

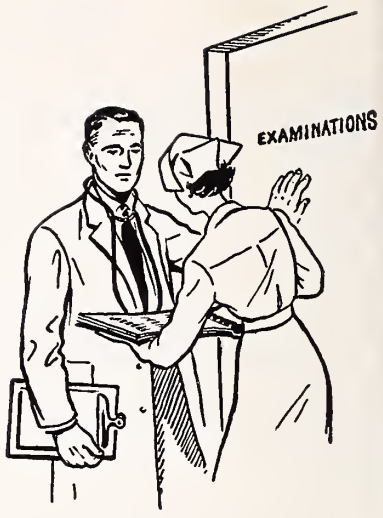
District 6. Charles B. Hoeven (R)

District 7. Ben F. Jensen (R)

Don't let laziness or complacency saddle us with socialized medicine; write right and write NOW!!

HELEN G. HUGHES

THE DOCTOR'S BUSINESS



Ten Rules for Successful Investing

HOWARD D. BAKER
Waterloo

For most people, investing is a secondary activity to which they devote less attention than to their principal business or profession. Consequently, they accord it much less study and time than it deserves and needs. The beginner needs to learn the rules for investing, and even those who have been "in the market" for years will find it profitable to review those principles.

If you are an "average" investor and have neither the time nor the inclination to follow the market day by day, to watch for quarterly corporate reports and to scrutinize balance sheets, the investment fund is still by far the most logical tool for you to use. But if you already have substantial accumulations, and if you feel that you have the necessary capabilities and adequate time for individual investing, you will probably benefit from learning and following a few basic investment precepts:

1. *Make every investment decision conform to your specific needs.* This, perhaps, is the most important principle. A young investor with high earning power is justified in assuming a reasonable degree of risk, whereas an older investor with a lower earning power must necessarily invest primarily for safety of capital. These objectives aren't mutually exclusive, of course, and everyone's investment practice must be kept in tune with our changing economy. For example, even the older, more conservative investor must have some holdings in "variable dollar" securities today in order to assure the maintenance of his purchasing power against the continuing inflationary trend.

2. *Risk should be minimized as much as possible.* The use of dollar averaging, the balancing of fixed and variable investments, and the restriction of variable investments to "quality" issues—all these are means of accomplishing this purpose.

3. *Maintain adequate diversification at all times.* Since it is impossible, scientifically, to select one, two or even three issues best suited to capital growth, broad industry diversification improves an investor's chances of maintaining a quality portfolio that will achieve reasonable profits.

4. *Holdings should be geared to economic conditions.* For example, bonds with distant maturity dates should be avoided in times of rising interest rates, but are excellent purchases when rates are steadily declining. During recessions, the stocks of firms that manufacture staple, non-durable goods are the best buys; and during boom periods, the equities of firms manufacturing the more cyclical durable goods offer the greater potential.

5. *Try to anticipate general market trends.* You can never do this precisely, but regardless of your objectives, you should reduce your holdings in volatile common stocks when price-earnings multiples are attractively low.

6. *Buy only after thorough investigation, never on the basis of tips or hunches.* Although the scientific approach is less adventurous, it is the only sound approach to long-term investment success.

7. *Insofar as possible, buy when the price is right.* The prices of issues under consideration should be compared with prices for comparable shares in the same industrial category and in the market generally. Purchases should not be made at prices that are considerably higher in relation to earnings and yield than those that currently prevail in the market. Shares with a "public appeal" that is running beyond the true potential of the issuing company should be avoided.

8. *No individual issue can be purchased and put away.* Keeping abreast of your holdings is a constant task. Corporate fortunes change, making today's most attractive purchase a prime candidate for sale a few months or a few years hence. Study each company's annual and interim reports, and keep in touch with technological and economic developments.

9. *Don't speculate!* No part-time investor—and

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

few professionals, for that matter—can do it successfully. Invest for long-term, rather than for the less predictable short swings. Margin trading, gambling in penny stocks, and taking a flier in a promotional situation invariably involve losses for the average investor.

10. *Be patient!* Don't reach for a stock that has already enjoyed a sustained rise, and don't allow technical market adjustments to panic you into selling an attractive security. Be realistic in your expectations. The seasoned investor has learned to "ride with the tide." The market is always there, and if one commitment fails to measure up to your expectations, the next one may do better—*if you follow the rules.*

The poor results of most individual investment programs can be attributed directly to a failure to follow these ten basic concepts, and to the abstract approach which the majority of investors take toward the highly technical task of building an investment portfolio.

AMA Meets This Year in San Francisco

The AMA Council on Postgraduate Programs has announced that the scientific program for the 113th Annual Convention in San Francisco, June 21-25 is virtually complete, and that an attendance of between 15,000 and 16,000 physicians is anticipated.

When the AMA held its last convention in San Francisco, in June, 1958, the total physician registration was 13,997.

Dr. John Hickam, Indianapolis, chairman of the program planning committee of the Council, said that the following general scientific meetings have already been coordinated by section secretaries: Differential Diagnosis of the Liver and Pancreas; Hyperbaric Oxygen Phenomena; Computers in Medicine; Autoimmune Mechanisms and Disease; Cardiovascular Opacification; and Tumors of the Endocrine Function. In addition, a special half-day program on various aspects of heart disease will be offered by the American College of Cardiology and the American Heart Association.

The popular and interesting Research Forum program, under the chairmanship of Dr. Edwin H. Ellison, Milwaukee, will be offered again at the San Francisco Meeting. Sixty papers, based on new and original work being done in the nation's medical schools, will be delivered by young, outstanding researchers. In contrast to previous forums, one or two major areas of research, possibly organ transplantation and hyperbaric oxygen in the treatment of disease, will be covered in a symposium presentation.

A general scientific meeting program that has already elicited considerable interest is the half-day session on Hyperbaric Oxygen Phenomena—the science of administering oxygen at super atmospheric pressure. Principal investigator of hyperbaric research is Dr. Claude R. Hitchcock, chief of surgery at Minneapolis General Hospital and professor of surgery at the University of Minnesota. He and three other Minneapolis surgeons —John J. Haglin, Russell H. Harris and Frank E. Johnson—as well as other researchers throughout the country, were attracted to hyperbaric therapy by two articles appearing in SURGERY in March, 1961. The author was Dr. I. Boerema, of Amsterdam, Netherlands, whose human-size hyperbaric chamber has been in use since 1959.

At the present time, research uses for the hyperbaric chamber are many. Applications where research is expected to be highly productive include acute coronary occlusion, acute carotic artery occlusion, acute intracerebral vascular occlusion, acute cerebral hemorrhage with rupture of berry aneurysm, irradiation, traumatic shock, pulmonary edema and cardiac defect surgery.

SECTIONS OFFER PROGRAMS

All of the 21 Sections, representing various specialties in medicine, are formulating interesting and educational programs for the San Francisco Convention. Subjects include toxicants and insecticides, chronic ulcerative colitis, psychiatry in general practice, gynecology for the general practitioner, ecology to closed environments (submarines and space craft), basic courses in hand surgery and common foot problems, prosthetics, differential diagnosis of the liver and pancreas, management of lower extremity amputees in the light of recent research, procedures for the treatment of anorectal diseases, and contamination and infection of the bladder and kidney.

San Francisco's Civic Auditorium has been completely modernized at a cost of more than 7 million dollars and will be ready for the AMA convention in June. The AMA scientific exhibits will be set up in the auditorium. The exhibit hours will be 8:30 a.m. to 5 p.m., Monday through Thursday and 12:00 noon to 5 p.m. on the opening day, Sunday. The industrial exhibits will occupy adjoining Brooks Hall under the north half of the Civic Center Plaza.

San Francisco, in keeping with its growing attractiveness as a vacation and convention center, has increased its housing capacity since the AMA last met in the Pacific coast city six years ago. Several major new hotels have been constructed, existing ones have greatly expanded their accommodations, and hundreds of fine motels now encircle the entire bay area. Complete forms for hotel reservations, as well as for advance convention registration, appear periodically in all AMA publications. The entire scientific program and all essential information for attendance will be published in the Convention Issue of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION on May 9.

STATE DEPARTMENT OF HEALTH

RALPH H. HEEREN, M.D., ACTING COMMISSIONER

Tuberculosis in Iowa, 1963

Regardless of when a case of tuberculosis may actually have developed, it must be counted in public health reports as a new case for the year in which it is first reported to the State Department of Health. Three hundred forty-two cases of tuberculosis were thus reported during the first 11 months of 1963. For the year 1960, a total of 444 new cases were reported. In 1961 the number dropped to 300, and in 1962 the total stood at 297, the lowest number of new cases on record.

Both the Division of Tuberculosis Control of the State Department of Health and the Iowa Tuberculosis and Health Association are definitely interested in these figures. Both are naturally concerned as to whether the 342 "new" cases reported during the first 11 months of 1963 represent an increase in the disease in the state. If the number of cases reported were to continue at the same level for the month of December, the total for 1963, according to the Iowa Tuberculosis and Health Association's statistical service, would probably reach 380.

To assess the true meaning of this apparent increase in cases, the agencies are working together in studying the cases. Analysis may show that more old, inactive cases have been found this past year than in comparable periods previously. For example, the 297 cases reported during 1962 were divided between 186 cases of infectious tuberculosis and 111 cases classified as non-active or non-infectious. If this is actually the explanation, it may be that the establishment of the central case registry has put more pressure on more physicians to report final diagnoses on cases that have been carried for some time as suspected or unconfirmed tuberculosis. It is quite possible that the delayed diagnosis on many of these cases may be inactive tuberculosis.

It is likewise possible, however, that an actual increase in new cases has taken place. The infectious case of tuberculosis no longer remains hospitalized and isolated until the period of infectivity has passed. Most patients, after a few months of hospital care, go back into their respective communities still infectious. A certain share of those persons carry organisms that are resistant to all of the three drugs used in treatment. New cases of tuberculosis are discovered with organisms resistant to all drugs. We must remember, too, that the case load of infectious tuberculosis is not just the number of new cases of infectious tuberculosis discovered within any 12-month period. It also includes those that were found years earlier and that have remained infectious or have been reactivated. A careful estimate of these numbers is that Iowa has at least 2,000 or more probably 2,500 persons with tuberculosis in an infectious stage!

Most of these patients are not hospitalized, and the likelihood that most of these 2,000 or 2,500 Iowans with infectious tuberculosis are going about freely in their own communities must convince us that tuberculosis control in our state is still to be achieved.

TUBERCULOSIS—NEW CASES

IOWA—1963

Counties	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Allamakee	1					3					1	1	6
Appanoose												1	1
Benton	1							1					2
Blackhawk	1		3	1	1	1	2					1	10
Boone		1							1			1	3
Bremer											1		1
Buchanan				1					1				2
Buena Vista										1			1
Calhoun			1					3					4
Carroll	1	1						2					4
Cass						1				1			2
Cerro Gordo	2	2	2	1		1		1			1		10
Cherokee				1			1	1					3
Chickasaw					1		1	1					3
Clarke							1						1
Clay							1	2		1			4
Clayton	4		1										5
Clinton			2		1	3							6
Crawford	2												2
Dallas			1					1				1	3
Davis				1								1	2
Decatur					1			2					3
Delaware			3		1	1		1			1		7
Des Moines	1					2		1			1	1	6
Dickinson				1									1
Dubuque		1	1			3	1	2	2				10

Counties	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Emmet											1		1
Franklin				1	1								2
Fremont				1				1					2
Grundy												1	1
Guthrie		2	1						2				5
Hamilton						1						1	2
Hancock								1		1			2
Hardin	1					1		2	1	1			6
Harrison	1							2					3
Henry		1	1										2
Howard				1	1								2
Humboldt			1			1							2
Ida				1									1
Iowa											1		1
Jackson						1						2	3
Jasper						4							4
Jefferson	1							1					2
Johnson		1			1	1	1	3				1	8
Jones							1						1
Keokuk					1		1						2
Kossuth	1							1	1			1	4
Lee	1		2				5	1		1	1		11
Linn	2	1	1			2				1	1	5	13
Louisa								1					1
Lyon								1					1
Madison						2							2
Mahaska	1			1								1	3
Marion			1								1		2
Mills				1		1					1		3
Montgomery					1							1	2
Muscatine			2				1						3
O'Brien	1							1					2
Page		1					1						2
Palo Alto									1				1
Plymouth			1										1
Pocahontas								1					1
Polk	6	5	3	4	5	4	5	5	3	3	4	6	53
Pottawattamie		1			1	1		1			2	1	7
Ringgold	1	1					2						4
Sac				1	1					3	1		6
Scott	2		1	1	5	7		3	4	2	4	6	35
Shelby										1			1
Sioux			1					3					4
Story	1		1	1	1	1		1	1				7
Tama	1		1										2
Taylor							1						1
Union			2	1			1	1		1			6
Van Buren									1			1	2
Wapello			1				1	2	2	1	1		8
Washington					1	1		1	1			1	5
Wayne		1			1	1							3
Webster					1				1			1	3
Winnebago				1							1		2
Winneshiek										2			2
Woodbury	1	1	1			3		3	3	2		1	15
Wright	1										2		3
1963 Total	35	20	36	21	26	48	27	54	25	21	25	37	375
1962 Total	21	28	26	22	18	21	21	31	37	21	21	30	297

1963 Total Reactivated Cases—15

1962 Total Reactivated Cases—19

Morbidity Report for Month of January 1964

Diseases	1964 Jan.	1963 Dec.	1963 Jan.	Most Cases Reported From These Counties
Diphtheria	0	0	1	
Scarlet fever	351	198	319	Clinton, Dubuque, Hancock, Jefferson, Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	89	116	1359	Polk
Whooping cough	3	3	4	Polk, Story, Van Buren
Brucellosis	7	24	9	Scott
Chickenpox	264	267	808	Clay, Des Moines, Dubuque, Polk, Scott
Meningococcic meningitis	0	1	0	
Mumps	1126	771	227	Dubuque, Jasper, Polk, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	29	27	27	Cerro Gordo, Guthrie, Plymouth, Tama
Rabies in animals	28	21	12	Humboldt, Linn, Story, Winneshiek
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	35	38	37	For the state
Syphilis	66	65	45	For the state
Gonorrhea	91	108	109	For the state
Histoplasmosis	1	2	4	Polk
Food intoxication	0	35	0	
Meningitis (type unspecified)	0	5	0	
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	1	
Salmonellosis	8	8	5	Linn, Polk
Tetanus	0	0	1	
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	0	2	
H. influenzal meningitis	1	0	0	Union
Amebiasis	1	4	0	Boone
Shigellosis	1	0	1	Polk
Influenza	177	330	0	Polk

Woman's Personality Linked to Age at Physical Maturity

A relationship has been found between the age at which a girl matures physically and her personality in later life, according to William G. Shipman, Ph.D., Chicago. In a study of 82 healthy women between the ages of 20 and 50, Dr. Shipman found that women who developed at the early age of 10 and 11 tended as adults to be more conservative and uncritical in their thinking, more lax and inexact, more trusting of others, and more group dependent. On the other hand, he discovered that women who developed later than normal—at age 14 or older—were more dominant and aggressive, more critical and ready to experiment, more suspecting and more self-controlled.

The findings were drawn from personality tests and interviews with the women, all but two of whom were married, and were reported in the February, 1964, ARCHIVES OF GENERAL PSYCHIATRY.

"The finding that a meaningful cluster of traits in these middle aged women is related to a date some 20 years ago is most striking," Dr. Shipman commented. "While the magnitude of the relationships is small, it implies that some principle of causation applies to at least a portion of the cases." Although causation is not shown by these correlations, he concluded that early or late adolescence seems to be a very important factor in shaping personality in adolescence and that there now is some evidence of a relationship between ages at puberty and personalities of women in their 30's and 40's. Physical maturity is influenced by heredity, climate, and race, Dr. Shipman said, but typically occurs at age 13, or when the skeletal age is 13½.

While the early developing boy easily becomes a self-assured leader with his peers, the early developing girl is at a decided disadvantage, according to Dr. Shipman. "She becomes physically conspicuous among her classmates at a time when teenagers are most sensitive and easily disturbed at being different from their associates," he said. "Too much may be expected of her intellectually and emotionally because of her more mature appearance." He speculated that her retiring manner in adolescence attracted men who needed to be clearly dominant and that marriage later made these roles permanent.

The late maturing girl, Dr. Shipman said, is under somewhat less stress, but still has increased personal problems. "As time goes on, she may become more aware of and embarrassed about her difference from the other girls," he explained. "She may react by either trying to keep up with the more mature girls socially or she may withdraw into solitary activities." It would seem natural for her to move away from social frustrations to intellectual, school matters, he added.

"Apparently early or late adolescence has an effect on increasing or reducing further intellectual growth," according to Dr. Shipman. "It also seems very much to influence the degree of social concern developed in the individual."

Dr. Shipman is affiliated with Michael Reese Hospital, Institute for Psychosomatic and Psychiatric Research and Training.

Second Blood Fat Important in Arterial Disease

A high concentration of cholesterol in the blood is usually not associated with coronary or cerebral artery disease unless another blood fat, triglyceride, also is elevated, a study has indicated. It was also found that a low blood cholesterol level may be associated with coronary artery or cerebrovascular disease if the triglyceride content is increased.

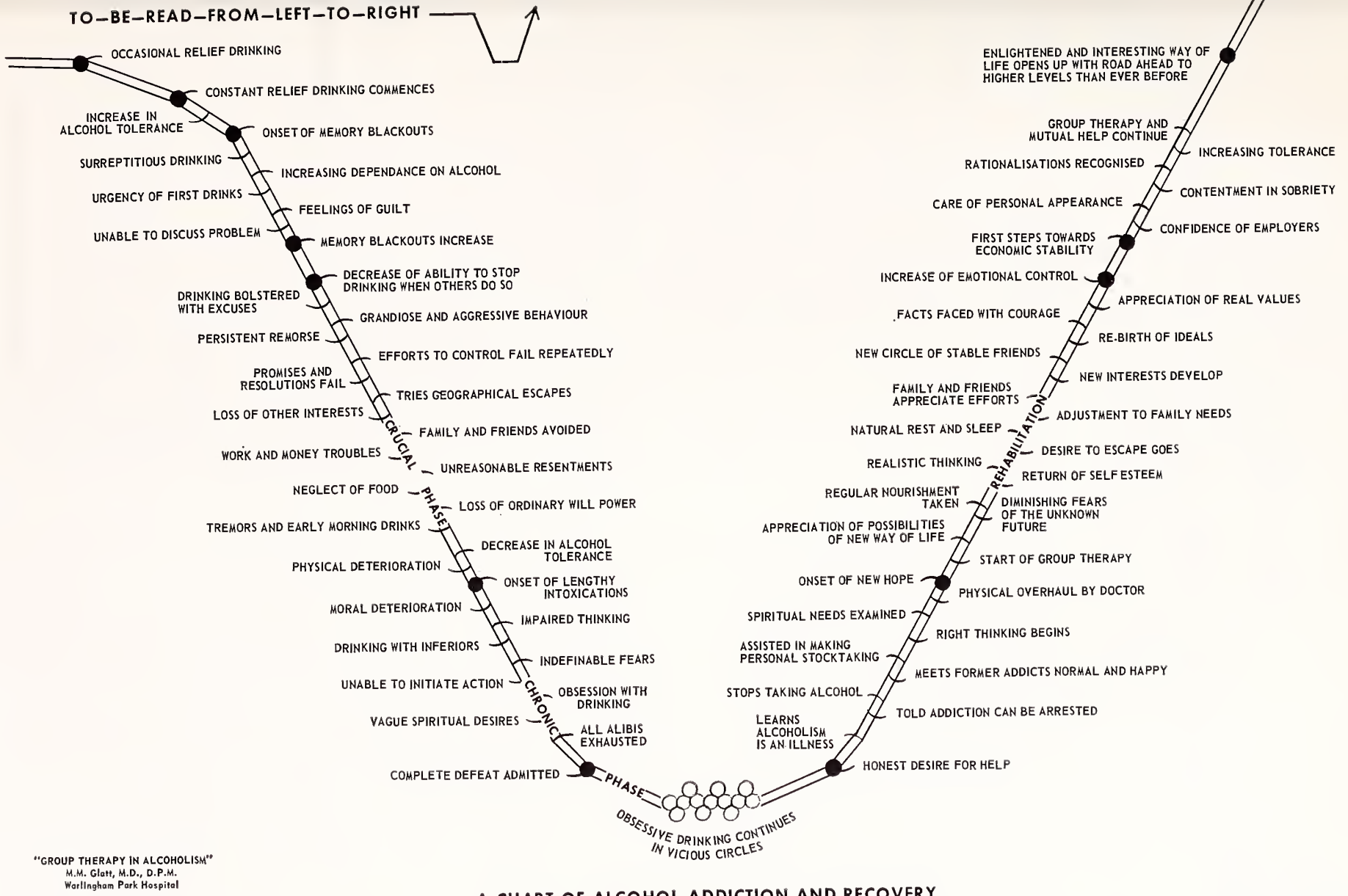
The role of triglyceride in arterial disease was emphasized in a report by Drs. Robert G. Feldman, New Haven, Conn., and Margaret J. Albrink, Morgantown, W. Va., in the January ARCHIVES OF NEUROLOGY.

The report was based on a study of 63 men, aged 37 to 73, with cerebrovascular disease and 399 normal men. However, the researchers analyzed the findings in conjunction with a previous study of blood fats and coronary disease. The importance of evaluating the effect of therapy on triglycerides as well as cholesterol is brought out in both studies, they concluded.

Simple weight reduction is probably the most effective means of lowering blood triglycerides, they added.

Alcoholism: The Next Move

In line with the article "Alcoholism—At What Stage Should the Doctor Enter the Picture?" by Charles A. Churan, Jr., of the Iowa State Commission on Alcoholism (January, 1964, issue of the JOURNAL OF THE IOWA MEDICAL SOCIETY), we are entirely in accord with the JOURNAL's editorial suggesting that the Iowa Medical Society establish a special committee on alcoholism. By the very nature of this malady, we see a really worthwhile opportunity for the general practitioner to increase his stature as friend and counselor within his community. Alcoholism is an illness in which the patient is seldom alone in his suffering. Every member of his household is affected—often cruelly so. In this sense, it is a family illness. What is more logical, then, than that the family doctor should deal with alcoholism in all its phases? The chart appearing in this issue of the JOURNAL helps to show how he can do so.



"GROUP THERAPY IN ALCOHOLISM"
M.M. Glatt, M.D., D.P.M.
Warlingham Park Hospital

A CHART OF ALCOHOL ADDICTION AND RECOVERY

The above chart, based on an analysis of 2,000 case histories by E. M. JELLINEK, Sc.D., M.D. (h.c.) has proved useful to general practitioners in consultation with problem drinkers. With it, a patient-doctor rapport is established wherein the compulsive drinker can face up to the destructive nature of his illness. Need the patient go the full route downward in the progression? At what point can the curve be turned upward toward recovery? Is the psychiatric view that AN HONEST ADMISSION IS ESSENTIAL TO TREATMENT a valid one? These are some of the questions in alcoholism that the family doctor, in his role of friend and counselor in the community, can best answer from personal experience. This chart is available, full-size, from the Commission on Alcoholism, State Office Building, Des Moines.

Iowa Chapter of the American Academy of General Practice

AAGP Annual Scientific Assembly

The theme for the 1964 annual scientific assembly of the American Academy of General Practice, in Atlantic City, New Jersey, April 13 through 16, will be "The Family in Medical Perspective." Join your Academy colleagues to share medical and human experiences in the tangy air of the Jersey Shore. Secure the best in purposeful postgraduate education in this 26-speaker program featuring some of the best-known names in medicine.

If you can possibly arrive two days early, you will benefit much by attendance at the Congress of Delegates meeting, which opens at 10:00 a.m. on April 11 in the Grand Ballroom of The Shelburne Hotel, in Atlantic City.

Following is the scientific program that is to begin at 1:00 p.m. on

Monday, April 13

FAMILY MEDICAL CARE PANEL:

"Childhood and Adolescence"—Marjorie E. Conrad, M.D.

"Marriage and Parenthood"—Russell Levy, Ph.D.

"The Rewarding Years"—Edward Henderson, M.D.

Tuesday, April 14

"Post-Infectious Hepatic Functions"—Carroll M. Leevy, M.D.

"Diagnosis of Coronary Heart Disease"—Harper K. Hellems, M.D.

"Diagnosis of Collagen Disorders"—Edmund F. Foley, M.D.

"General Practice in the World Today"—J. H. Hunt, D.M.

ENDOCRINOLOGY SYMPOSIUM:

"Anabolic Agents"—Herbert S. Kupperman, M.D.

"Progesterones"—Arthur H. Klawans, M.D.

"Adrenals"—Thomas F. Frawley, M.D.

"Fetal Distress in the Second Stage"—Joseph B. Forman, M.D.

"Episiotomy"—Charles E. Darling, M.D.

Wednesday, April 15

"The Oral Cavity—An Indicator of General Health"—Lester W. Burket, D.D.S., M.D.

"Mammograph"—Robert L. Egan, M.D.

"Anomalies of the G.I. Tract in the Newborn"—J. Stanley Battersby, M.D.

"Puzzling Infant Rashes"—Robert D. Mercer, M.D.

PANEL ON BREAST TUMORS:

Philip Thorek, M.D., Moderator

"Malignant"—George Crile, Jr., M.D.

"Benign Operative"—Edwin H. Ellison, M.D.

"Benign Nonoperative"—Morris T. Friedell, M.D.

"Defective Hearing"—Ben H. Senturia, M.D.

"Sinusitis"—Daniel Miller, M.D.

Thursday, April 16

"The Role of the General Practitioner in Occupational Medicine"—H. Glenn Gardiner, M.D.

"The Adequate Neurological Exam"—Howard D. Fabing, M.D.

VENEREAL DISEASE ROUND TABLE

Maynard I. Shapiro, M.D., Moderator

M. Brittain Moore, Jr., M.D.

T. Lefoy Richman

E. W. Thomas, M.D.

Lecture program ends 12:00 noon on Thursday

A Symbol to Support...

AMA-ERF

American Medical Association — Education and Research Foundation

535 N. Dearborn St., Chicago 10, Ill.

WOMAN'S AUXILIARY
to the
IOWA MEDICAL SOCIETY

1964 Annual Meeting, Des Moines

Program Theme: "Serve and Communicate"

MRS. GEORGE J. McMILLAN, *Presiding*

ALL Physicians' Wives Welcome!

Sunday, April 26

2:00-4:00 p.m. BOARD MEETING—Iowa Room, Hotel Kirkwood—state officers, councilors, and committee chairmen

5:30 p.m. HOSPITALITY HOUR—Iowa Room, Hotel Kirkwood

6:30 p.m. DUTCH TREAT BUFFET—Garden Room, Hotel Kirkwood—ALL board members, county presidents, convention committee chairmen and husbands

Monday, April 27

8:00 a.m.-3:00 p.m. REGISTRATION—Mezzanine, Hotel Savery
HOSPITALITY ROOM—East Room, Hotel Savery (coffee and rolls)

9:00 a.m. Formal Opening of 36th Annual Meeting—Des Moines Room, Hotel Savery
Mrs. G. J. McMillan, Fort Madison, presiding
Business Session

10:00 a.m. The Year—1963—Mrs. G. J. McMillan
Report of President Elect—Mrs. H. G. Ellis

10:45 a.m. MEMORIAL SERVICE

11:00 a.m. Guest Speaker—Mrs. R. A. Sutter, St. Louis, Missouri

12:00 LUNCHEON—honoring County Presidents and Past State Presidents
"Preparing Your Child for College and Keeping Him There"—Mr. Charles Gavin, Carleton College
Presentation of AMA-ERF Awards

2:00 p.m. Fashion Show—presented by Wolf's

2:30 p.m. Auxiliary Goals—Mrs. S. M. Korson
S Safety Sing—Mrs. H. A. Weis
E Education: Health Careers—Mrs. E. E. Dawson
R Relief: International Health—Mrs. F. P. Ralston
V Vision: Mental Health—Mrs. B. R. Goldman
I Interest: Rural Health—Mrs. S. P. Leinbach
C Citizens: Legislation—Mrs. R. F. Nielsen
E Enthusiasm: Evaluation of Auxiliary Program—Mrs. Henry Boe

3:00 p.m.—WORKSHOPS—Des Moines Room
1. County Presidents and Presidents Elect—Mrs. McMillan
2. Councilors—Mrs. Henry Boe
3. State Chairmen 1964-1965—Mrs. H. G. Ellis

Tuesday, April 28

(Area planning session in parlors C and D at 8:00 a.m.)

8:00 a.m.-12:00 noon—Registration—Mezzanine, Hotel Savery

8:00-9:00 a.m. HOSPITALITY ROOM—Parlors A and B, Hotel Savery

9:00 a.m. House of Delegates called to order—Terrace Room
Business session
Election and installation of officers
Inaugural Address—Mrs. H. G. Ellis

11:00 a.m. Communication: Mr. Richard Priebe, Public Relations Department, W. A. Shaeffer Pen Company
Otis D. Wolfe, M.D., President Elect, Iowa Medical Society

12:00 noon LUNCHEON—honoring retiring president, Mrs. G. J. McMillan
Invocation: Bishop Edward C. Daly, O.P.
Guest Speaker: The Honorable James Bromwell, U. S. Congressman, Iowa, Second Congressional District
Political Action: R. C. Brown, M.D., and F. C. Coleman, M.D.
Presentation of Essay Awards
Presentation of Volunteer Health Service Award
ADJOURNMENT

2:30 p.m. BOARD MEETING—Parlors A and B

7:00 p.m. BANQUET—Grand Ballroom, Hotel Fort Des Moines

9:00 p.m. CADUCEUS CAPERS—Benefit Dance for Woman's Auxiliary Health Education Loan Fund—Grand Ballroom, Hotel Fort Des Moines

The President Says

Our year is swiftly moving to its end, and in order to make the transition from one year to the next as easy as possible, it is very important that we take time now to gather up the loose ends and make the final effort to make this a good year.

Notebooks are given to all state officers, councilors, chairmen, and county presidents. It is *most* important that this notebook be given to your successor in the best possible condition. Keep it up to date and keep an accurate account of all your work so that it will be easier for the new officer to carry on. Remember the work of the Auxiliary does not end with the finish of this year; it keeps on. A good program will be just as good next year as it is now. It is better for you to do *one* project well, than to do several half-heartedly.

Essay Contest—We are again sponsoring this worthwhile program, but if we do not have more participation than last year, this project will not be continued. It seems a shame, with the great need for doctors, that we cannot get high school students interested in this fine profession. What have you done to encourage this fine program?

The Woman of the Year award will be given at our annual luncheon on Tuesday, April 28.

The Annual Meeting Committee has worked hard arranging a wonderful meeting this year to be held April 27 and 28. We would like to have representatives from all counties. We know you will gain much by attending this meeting, so make your plans to attend.

—MARY MCMILLAN, *President*

Tetanus Immunization

The American Medical Association is conducting an intensive and continuing campaign to maintain the immunization of the American people against tetanus. This campaign consists of public and professional appeals to the public to get and/or renew inoculations with tetanus toxoid.

Tetanus, formerly called "lockjaw," is completely preventable. The armed services, which provide tetanus immunization routinely, rarely have a case, but during recent years an average of 400 cases annually have occurred in the United States, and about 60 per cent of those afflicted have died. All of these deaths were unnecessary.

Since the death rate from tetanus is highest among young children, emphasis should be placed on inoculating them in infancy. After immunity has been established, everyone should maintain protection by booster doses every five years, and a similar booster dose after any injury that might cause tetanus.

Even seemingly trivial puncture wounds permit the entrance of tetanus bacteria. The tetanus organism is commonly found in the soil, and since the bacilli grow in the absence of air, puncture wounds are particularly likely to produce the disease. Out-of-doors living, gardening and sports make everyone eligible for infection. Automobile accidents and the disasters for which we prepare in civil defense also produce injuries subject to tetanus contamination.

Many adults are unaware of their need for periodic booster shots. Tetanus toxoid is an extremely effective preventive, and the danger of tetanus can be avoided by keeping inoculations up-to-date.

The campaign is being conducted along two chief lines: (1) encouraging physicians to immunize their patients against tetanus or to reinforce existing immunity by "booster" doses of toxoid, and (2) urging people to go to their physicians for immunization against tetanus.

Information on the dangers of tetanus infection and the availability of a highly effective immunizing agent will be brought to public notice through the press, magazine articles, and radio and TV Public Service announcements.

The Auxiliary can contribute to this campaign by making information on tetanus prevention available to parent-teacher organizations, service clubs and educational agencies.

The anti-tetanus campaign also provides an excellent opportunity for Rural Health and Community Service Committees to work with farm organizations in a preventive program. Auxiliary members should contact their County Medical Society for information on what they can do to help with the tetanus immunization campaign. The Iowa Medical Society has a limited supply of leaflets that Auxiliaries may have for distribution.

The Water Is Growing Warm!

There's an old story that says you can't kill a frog by dropping him in boiling water. He reacts so quickly to the sudden heat that he jumps out before he is hurt. If you put him in cold water and then warm it up gradually he never decides to jump till it's too late. By then he is cooked.

Men are just as foolish. Take away their freedom overnight, and you've got a violent revolution. Steal it from them gradually (under the guise of "security," "peace," or "progress") and you can paralyze an entire generation.

Worst of all, we never learn. Today we cannot believe that Medicare is the same warm water that will one day boil us in Socialized Medicine. We see no connection between farm price supports and nationalized agriculture. If we draw a parallel between subsidized teachers' pay and federal control of education, we are called "extremist."

The tragedies of history are always repeated by those who refuse to learn them. To seek guidance from the past is not "turning the clock back" as we are so often told. It is merely a good way to keep out of hot water.

—LILLIAN NIELSEN (MRS. R. F.)
(borrowed from Blackmer Pump Company report)

COUNTY AUXILIARIES

Dallas-Guthrie

The Woman's Auxiliary to the Dallas-Guthrie County Medical Society met with the doctors at the Horse and Buggy Inn, Adel, for dinner on January 16, 1964. Following the dinner, the Auxiliary and the Medical Society held separate meetings. Mrs. C. A. Fail presided at the Auxiliary meeting, with nine members in attendance. The following officers were elected for 1964: president—Mrs. C. A. Nicoll, Panora; president-elect—Mrs. A. M. Cochrane, Perry; first vice-president—Mrs. N. L. Krueger, Casey; secretary—Mrs. Howard A. Smith, Woodward; and treasurer—Mrs. D. W. Todd, Guthrie Center.

The members discussed the King-Anderson Bill and were urged to write to their Congressmen in opposition to the Bill, giving reasons for their views.

Dubuque

Daniel Boone, Lillian Russell, Diamond Jim Brady and George Washington were all on hand to greet guests attending the eleventh annual Mardi Gras Ball held February 8 at the Elks Club in Dubuque. These famous "characters" as well as others from the "wild and woolly West" and those who have made the United States great exemplified the theme "American Heritage."

The Mardi Gras, sponsored by the Dubuque County Medical Auxiliary, is a highlight of the Dubuque winter social season. Proceeds from the dance provide scholarships for girls attending Finley or Mercy Schools of Nursing in Dubuque. Fifteen scholarships have been given from the proceeds of the past ten Balls.

Of the fifteen recipients, nine girls are graduate nurses working either full time or part time in their profession. The other six are now in training. Charlotte Zalaznik, Barbara Brimeyer and Mary Healy are third-year students, and Judy Hagerty, a first-year student at Mercy Hospital School of Nursing. Judy White is a third-year student, and Kathleen Drury, first-year at Finley School of Nursing. Each girl is sponsored by a member of the Auxiliary, who acts as her advisor during her training.

In the years before the Mardi Gras project, the Dubuque Auxiliary contributed to the Iowa State Nurses Recruitment Fund.

Costumes were optional. Cocktail and formal wear was preferred by some guests, but masks were required, and were available for purchase at the door.

Marion

The Auxiliary to the Marion County Medical Society has had a busy and rewarding fall under the leadership of its president, Mrs. T. D. Clark.

At the first meeting in September, the Auxiliary entertained the Business and Professional Women at a dinner. Mrs. H. G. Ellis, the state president-elect was the guest speaker. She gave an excellent enlightening speech on "Medicare." It was well received by the group and seemed a fine way to inform the Auxiliary's friends as to the stand the medical profession takes on current medico-political problems.

A farewell luncheon was held for Mrs. Arthur Schanche at the home of Mrs. Yme Sloterdyk. Mrs. Schanche, who was moving to Ames, Iowa was presented with a farewell pin. A farewell luncheon was also held for Mrs. Wm. Rosborough whose husband has been transferred to Murfreesboro, Tennessee. She was also presented with a farewell pin.

The Auxiliary sponsored the Sabin Oral Polio Vaccine Clinic on Sundays in October, November and January. Members secured all the volunteer workers, and set up the clinics at four separate sites. A total of 63,000 doses were administered.

The Marion County Medical Society entertained the Auxiliary at dinner at Holland House, in Pella, in December. An interesting and informative evening program on Nigeria was presented.

—MRS. D. A. MATER

Have You Informed Us of Your Change of Address?

Postal regulations on second class mail have become more stringent. Under a new ruling, we must pay ten cents per piece for undeliverable second class mail, but worst of all, if you don't happen to reside or practice at the *precise* mailing address which we have for you, your JOURNAL will not be delivered. We urge promptness on the part of all JOURNAL readers in notifying us of address changes!

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. G. J. McMillan, 436 C Avenue, Fort Madison
President-Elect—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 12
Recording Secretary—Mrs. N. A. Schacht, 1025 North 23rd Street, Fort Dodge
Corresponding Secretary—Mrs. F. L. Poepsel, Box 176, West Point
Treasurer—Mrs. M. B. Cunningham, Norwalk
Editor of THE NEWS—Mrs. R. H. Palmer, Box 568, Postville

Histoplasmosis Infections in Mason City

At a meeting of the Cerro Gordo County Medical Society held in Mason City on January 14, Dr. D. J. D'Alessio and Dr. M. L. Furcolow, of the Kansas City office of USPHS, revealed that in testing Mason City's school children, about 30 per cent had received histoplasmosis infections, in 1962, when heavy equipment stirred dust along downtown Willow Creek.

The team found in their 1963 testing that the Willow Creek site, where bird-roost trees were removed in stream widening, seemed to be the point of infection. The fungus responsible for the respiratory disease thrives in moist soil and is often associated with bird droppings. The organism was found in soil at the Willow Creek site.

Of 3,000 school children given the skin tests, about 30 per cent were "reactors," and about half of the skin-test reactors had positive tests in follow-up blood testing. A positive blood test result indicates that infection has been recent, and the skin reaction can show up for years after infection.

The per cent of those infected, for each year of age, indicated that all histoplasmosis cases probably occurred about the same time, even though about half did not show as recently infected when testing was done more than six months after the suspected time of general infection.

The percentage of persons infected decreased with distance from the Willow Creek work site. It ranged from 77 per cent within a block of the site to 20 per cent on the city's outskirts.

The same results were indicated in the adult testing. About 400 individuals were checked, all of whom were known to have been at or near the Willow Creek working point. About 70 per cent of them showed evidence of having had histoplasmosis infection.

Local medical experience indicates that occurrence of the disease is normally fairly low. A "control" test of 888 school children at Forest City showed only 1.4 per cent having been infected.

Dr. Furcolow suggested that the remaining felled trees at the site be burned in the winter when few persons are in the area. Ground where starlings formerly flocked, to trees along the creek bank, could be oiled to assure that no further dust would be raised. With such precautions to keep dust settled, construction work in the area should be relatively safe.

Dr. Furcolow said that attempts have been made to sterilize the ground at similar sites elsewhere without success. A variety of efforts were made at Mexico, Missouri, without result. At the moment, the only good solution to the problem is keeping the dust down.

He emphasized that although serious cases of histoplasmosis occur in only a small percentage of infected persons, the occasional severe illnesses are too serious to warrant taking chances. A few are very ill when first infected, and a few have serious results in later years. When infected, one builds immunity to the disease. However, the child who has had the infection seems to lose immunity after he reaches the age of 50. For the overwhelming majority this is meaningless, but in a tiny percentage the disease progresses in a way that resembles tuberculosis. Tuberculosis-type therapy does not help, and there is little that can be done in the way of treatment.

The disease in not transmitted from person to person. The spore lies in the soil throughout a large Midwest region, and in many areas the disease occurs more frequently than in North Iowa. Only the fact that such a tiny percentage of infected persons have serious results keeps it from being a major medical problem.

In terms of disease study, the outbreak in Mason City was something of a textbook case, Dr. Furcolow stated, for it followed a pattern that was quite predictable. The dramatic contrast between Mason City and Forest City infection rates was part of the pattern that might have been expected. Disease organisms, so far, have been found only at the suspected Willow Creek site, although soil was tested in a number of other places in Mason City. The steady decline in number of test reactors from the Willow Creek site outward supported the theory that the disease was centered there. The "flat curve," when reactors were plotted on a graph by age group, was considered a good illustration of the single time of infection. Normally, more histoplasmosis reactors would be found at each succeeding higher age group, showing infection, off and on, from stable soil sources. But in Mason City the percentage of infection was nearly the same for each age group from five through 15. Boys above age 10 had a slightly higher rate of infection for an unknown reason—possibly because they get around town more.

Dr. Furcolow also said that as high as 40 per cent of the total Mason City population could have had histoplasmosis infection. Adults, even in this part of the Midwest, will normally have a higher percentage of past infections picked up naturally over the years. For instance, of 120 Forest City adults checked, there were test reactions for 16 per cent, as compared with the 1.4 per cent in Forest City children.

Dr. D'Alessio said that further soil testing at points in Mason City is being planned, to see whether other parts of the city have the disease organisms. Testing is also planned to see whether the organism is again covering the surface of soil turned at the Willow Creek site. Original tests showed the fungus most plentiful at a point where soil was undisturbed, but there was an indication that it might again become general in the area.



Increasing the Numbers of Iowa Physicians Will Require Sustained Effort From All of Us

The physician recruitment and distribution problem in Iowa has many facets and requires many measures for its solution. The Physicians' Placement Bureau operated by the Iowa Medical Society strives to bring doctors here from outside the state and to retain the ones who have been trained at the S.U.I. College of Medicine, but all the citizens of Iowa, laymen as well as physicians, must help, chiefly by keeping the state a competitively attractive place in which to live and work.

It deserves reemphasis that our state has almost exactly as many doctors of medicine as it has ever had, even though their present concentration in our larger towns and the fact that all of them are very busy make it seem that there are fewer. We must also bear in mind that changes in physician distribution have paralleled comparable changes in commercial patterns. Some of these are ones to which we must adjust; others of them, we may be able to change or even to reverse. Basically, the task of assuring Iowa the numbers of young doctors it will need is a part of the job of keeping young people generally from leaving the state, and the way to achieve that objective is to diversify and provide a glowing future for our economy through increased industrialization or the creation of tourist attractions.

THE PHYSICIAN "MARKET" BELONGS TO THE YOUNG DOCTORS

Localities where economic prospects are relatively bright and where health-care facilities are from good to excellent are acquiring more doctors, for there the young physicians are assured of busy practices right from the start. The IMS Physicians' Placement Bureau provides an exchange of information between either established practitioners who need associates or communities that are seeking doctors, on the one hand, and doctors who are willing to consider locating in Iowa, on the other. Those seeking young doctors are given information about the men who seem most likely to take an interest in what they have to offer, and the men who are serving internships or residencies, completing military obligations or wishing to move from one place to another are given lists of Iowa locations, together with suggestions about the ones of them which most nearly satisfy the requirements they have enumerated. The "selling job" is left to the individuals who seek to attract physicians to their communities, yet the Bureau is instrumental in the placement of at least a quarter of the doctors who begin practice in Iowa each year.

Almost all of the men who have located in Iowa recently have settled in population centers, and there is reason for believing that this pattern will persist. Half or more of them are specialists who could have been expected to gravitate to the cities, and most of the general practitioners have chosen to locate either in large towns or in small ones that have immediate growth prospects.

By means of its enrollment forms and the conversations that its staff members have had with many of the young men, a considerable amount of information has been compiled about the preferences of newly-licensed doctors of medicine. Each of them undertook the study of medicine because

he desired to serve humanity, but in the meantime he has acquired a wife and children whose needs he must also consider; he has worked very long hours for five or more years as a medical student and as an interne or resident; he and his wife have had less spending money than other people in their age bracket; and he has acquired debts totaling $20,000 or $25,000. Consequently, since opportunities to serve others abound everywhere, he is intent upon finding a situation in which he can practice the very best medicine; in which he won't be "on call" 24 hours a day and seven days a week; in which there are excellent schools for his children, and recreational and cultural activities for himself and his wife; and in which he can be reasonably sure of congenial associates and an adequate income. He has no money with which to buy a practice, and has little inclination to hang out his shingle by itself and to build up a practice from scratch.

More briefly and specifically, he wants and can be pretty sure to locate in a town of at least 3,000 people, and to have a partnership or a membership in a group, after a probationary year or two.

SMALL TOWNS MUST HAVE PROSPECTS OF BECOMING BIG TOWNS

In years past, every village had a doctor, or perhaps two or three, and the residents of those communities would like very much to replace them. To do so, however, is almost impossible. Those were the days of the one-room rural school, of the crossroads general store, of the local passenger train, and of fully-staffed freight, express and telegraph offices every few miles—all of which have likewise disappeared.

Small-town and farm people don't actually have less medical care nowadays, any more than they have fewer educational opportunities for their children, less food or greater isolation as a consequence of the other changes that have been mentioned. On the contrary, care rendered in well-equipped and professionally staffed doctors' offices and hospitals is far superior to the attention rendered in bedrooms and on kitchen tables, where children used to be born and emergency operations performed, and with automobiles and all-weather roads, patients can be transported safely and comfortably to doctors' offices or hospitals in less time than it once took a doctor to respond to a house call. The nearness of medical care in rural districts should thus be measured in minutes rather than in miles, and the community of a few hundred people which anticipates difficulty in getting prompt medical attention for its aged and bedridden might better invest in an ambulance than construct a doctor's office building and seek physicians to occupy it.

On the principle that the man who makes particularly good mousetraps will attract customers to his door, regardless of where he has chosen to set up shop, it is still possible for a physician—or far preferably for *two* physicians—to build up a thriving practice in a sparsely settled area, but the men who are willing to attempt that feat aren't numerous. Furthermore, though a doctor may prefer to live where there is good hunting and fishing, and may set up his practice there, the chances are at least 50-50 that his wife will soon yearn to move back to the city. The IMS Placement Bureau will continue looking for doctors who prefer rural practices, but its staff members can't reassure small towns about their eventual success in getting and keeping doctors unless at the same time the citizens find something in addition to farming on which to base their communities' future.

IOWA'S MEDICAL EDUCATION PROGRAMS WILL SOON BE EXPANDED

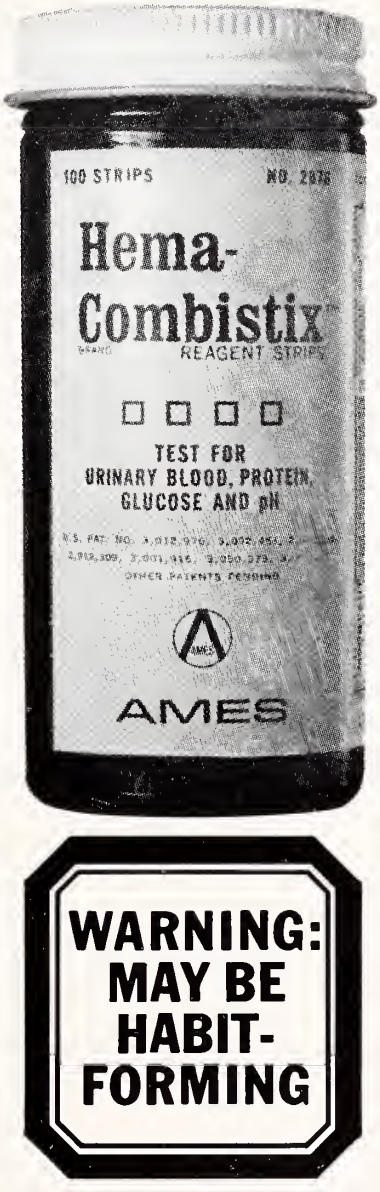
Iowa's most obvious need is for more general practitioners, and the state has been at a disadvantage in securing them because there are relatively few internships and no large military installations within its borders. About 40 per cent of graduates from the S.U.I. College of Medicine enter general practice, as compared with a national average of 30 per cent or less, but because nearly all of the Iowa graduates must go somewhere else for their internship training and for their two years of military service, too few of them have been returning here. But with the cooperation of the S.U.I. College of Medicine, plans are being completed for cooperative internship programs at the hospitals in Des Moines and at those in Cedar Rapids which it is hoped will increase both the quality of the teaching programs there and the numbers of internes they can accommodate.

Nothing, unfortunately, can be done about having Iowa-trained M.D.'s stay in the state for their required two years of military duty, but when there are more of them who have interned in Iowa, it is reasonable to suppose that greater numbers will come back as soon as they have shed their uniforms.

SUMMARY

The diversification of Iowa's economy is a crucial task, and we must not content ourselves with the idea that the currently static situation is likely to persist for the years that we have left to stay here. The American economy is and should continue to be a fiercely competitive one, and it is up to us to keep Iowa abreast of the more populous states as regards standards of living and capacities for growth. The most recent figures show that average individual incomes in Minnesota and Missouri are greater than in Iowa, though neither of those other states is nearer to the nation's principal markets.

When it becomes obvious that most Iowa communities are growing, and when in consequence the East and West Coasts seem less attractive, the tide of talented young people—young doctors among them—will turn.



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- Postmenopausal Bleeding: A Commonly Neglected Sign, page 184
- The Clinical Significance of Weight Change, page 188
- S.U.I. Clinical Pathologic Conference, page 191

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*Roseman, E.: *Neurology* **11**:912, 1961. 33664

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The JOURNAL of THE IOWA MEDICAL SOCIETY

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Greetings From the Dean

Members of the Iowa Medical Society:

It is a pleasure to greet all of you on the occasion of the annual College of Medicine issue of the JOURNAL. Many of you have visited us in the past year and we hope that more will in the coming year.

The College continues to grow, as it must in these times. We have created one new department (Anesthesia) and have been fortunate to secure approximately twenty-five new faculty members. Dr. William K. Hamilton accepted the headship of the Department of Anesthesia and Dr. Carl S. Vestling came from the University of Illinois to head Biochemistry. Next September Dr. Brian F. McCabe, now at the University of Michigan, will assume the headship of the Department of Otolaryngology and Maxillofacial Surgery. Further augmentation of the size of the faculty will be necessary in the next few years in order that we may cope with expanding enrollment. Many people are unaware that the College teaches more "other" students than it does medical students. There are, as a matter of fact, approximately 2,500 "others" taking course work or graduate work in the College, and this number will increase as the University grows.

I should like to report that the trend of the past two years toward increased numbers of applicants for admission has continued, so that we now have six applicants for each position in the freshman class. The caliber of the applicants also has improved, as would be expected. Much of the increase in number and quality has been due to the efforts of members of the Society who have presented to young people the multitude of opportunities in medical careers. Also, many have contributed individually or with others to our scholarship program. We earnestly solicit your continued help, for we have an increased need for scholarship funds.

Finally, I should like to report that Dr. Robert E. Carter, assistant dean, has undertaken responsibility for postgraduate education. We hope to provide greater opportunity to the physicians of Iowa for lifetime learning. Among other things, we intend to institute extramural postgraduate short courses in the next year. We would welcome your suggestions.

We are proud of our close ties with the Society and its members, and hope that you benefit from this association as much as we do.

Fraternally yours,



ROBERT C. HARDIN, M.D.
Dean



Research in Hospital-Pharmacy Procedures

Photo-scanners, which transmit hospital drug orders and a machine to package single doses of a medication will be used in a new research project at the State University of Iowa Hospitals. Supported by a $173,515 grant from the U. S. Public Health Service, the one-year study is designed to streamline the way drugs are distributed in hospitals and to simplify and improve communications needed in handling medications.

Mr. William W. Tester, an assistant professor of pharmacy and director of hospital pharmacy services at SUI, is the project director. The associate director of the project is Miss Marie E. Tener, director of nursing service at University Hospitals. "The idea of the study," said Mr. Tester, "is to improve the system without interfering with the traditional practices of physicians prescribing, pharmacists dispensing, and nurses administering medications." Typically, a physician's orders for a patient's medication are given to a hospital pharmacist after they have been transcribed by someone on the nursing staff. He explained that in the SUI research project, the pharmacists will receive medication orders directly from the physician through the use of a electronic device which will transmit a photo-duplicate of the order from the hospital ward to a nearby pharmacy substation.

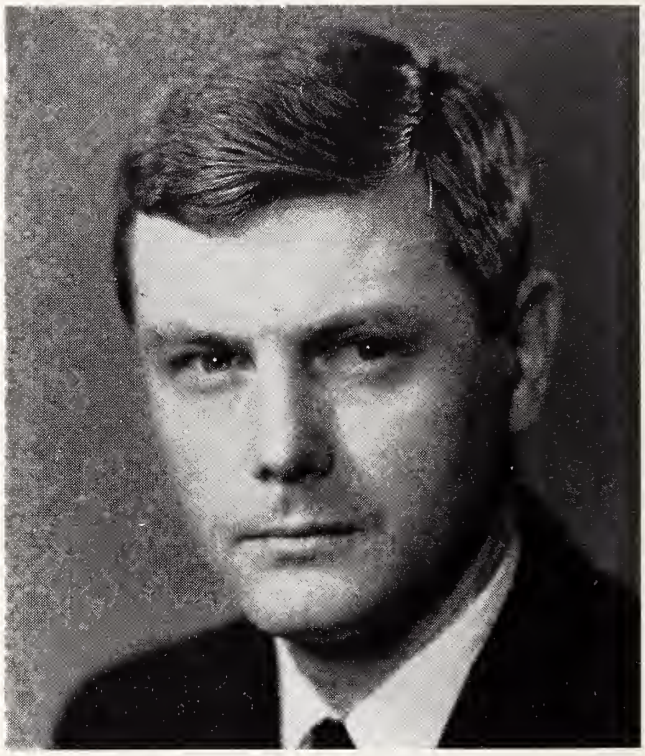
Part of the study will be a continuation of research on the efficiency of the individual-dose method of packaging medications. Mr. Tester and his colleagues at SUI have been instrumental in the design and construction of a machine that packages solid medications, such as tablets, individually in cellophane-like strips.

Another phase of the study are three methods of packaging single doses of fluid medications, which are called "Hypule," "Dropule," and "Cupule." The first two have already undergone trial at SUI. "Hypule" refers to a pre-filled disposable hypodermic device containing a sterile solution. "Dropule," a modification of this device, is designed for oral drop doses and eye drops. "Cupule" is a single dose packaging for oral teaspoon doses and ointments.

Mr. Tester stated that many other aspects concerning the handling of drugs in hospitals also will be studied, for as he pointed out, ordering, storing, distributing, prescribing, administering and charting activities are involved each time a patient receives a single medication. This can be a "big order" in any hospital, especially in one as large as the University Hospitals, where some 5,000 medications are given to patients during any 24-hour period.

Serving as project coordinator for the study is Mr. Harold J. Black, instructor in pharmacy and associate director of hospital pharmacy services. Technical director, Mr. Wellborn R. Hudson, is a professor of industrial and management engineering. Resource consultants are Mr. J. Richard Simon and Miss Dee W. Norton, both associate professors of psychology, and Mr. H. W. Saunders, professor of sociology. Other consultants are Mr. Dean Louis C. Zopf, of the College of Pharmacy; Dr. William Galbraith, assistant professor of internal medicine; Mr. John W. Colloton, assistant superintendent of University Hospitals; Miss Ann Whidden, assistant professor of nursing, and Miss Doris Levsen, assistant director of nursing service.

S.U.I. Faculty Member Named Markle Scholar



Dr. Leo Dunn, assistant professor of Obstetrics and Gynecology in the SUI College of Medicine, received a $30,000 Markle Award, for scholars in medical science, at an award banquet held March 3 in New York. The Markle Awards were established by the John and Mary R. Markle Foundation "to improve medical research and education by assisting some of the promising young teachers and investigators who too often, for financial or other reasons, must forego academic careers to enter private practice or industrial laboratories." The $30,000 grant will be set aside by the Foundation for use by the SUI College of Medicine towards Dr. Dunn's support over the next five years.

This is the second consecutive year that an SUI College of Medicine faculty member has won a Markle Award. Dr. James L. Spratt, an assistant professor of pharmacology, received an award last year.

Dr. Dunn received his medical degree from the College of Physicians and Surgeons, of Columbia University, in 1956. He joined the SUI faculty in 1962, after receiving five years of specialty training at the Columbia-Presbyterian Medical Center, New York. While there, he received an American Cancer Society Fellowship and served as an instructor for a year.

Scientific Articles

Where Are We in Cancer Chemotherapy Today?

R. L. LAWTON, M.D.
Iowa City

CANCER CHEMOTHERAPY, by one definition, can encompass a rather wide field. The ultimate changes that take place intracellularly, when an effect is obtained by the overt administration of a drug, must be sought for at the molecular level of activity. The use of a physical agent to effect such changes has been regarded by some as falling within the realm of chemotherapy. Such external physical agents might be heat, irradiation, cold, etc. Usually, in discussions of this topic, the physical agents are excluded, and for the purposes of this article, we shall further limit the field by excluding hormonal drugs as oncolytic agents.

The topic can be further limited by an arbitrary division of cancers into the lymphoma-leukemia versus the solid tumor group. The merit of these categories is that they seem to be mutually exclusive. On further analysis, it is apparent that most solid tumors are less sensitive than the lymphoma-leukemia group to cancer-chemotherapeutic agents. The solid tumors tend to be localized at some time during their existence, whereas the lymphoma-leukemia tumors are most frequently multicentric in origin. It is natural that many or even most of the solid tumors, at some time during their natural history, are observed by surgeons. The field for discussion in this paper can thus be defined as nonphysical, nonhormonal, solid-tumor cancer chemotherapy.

Dr. Lawton is a clinical assistant professor of surgery at the S.U.I. College of Medicine, and a member of the surgical staff at the Veterans Administration Hospital, Iowa City.

THE HISTORY OF CANCER CHEMOTHERAPY

Although this discussion has now been limited to the nonphysical, nonhormonal agents, it should be mentioned that unequivocal responses have been obtained in far-advanced mammary lesions through the use of androgens, estrogens, and adrenal cortical steroids. Estrogens have been used for years in the control of prostatic cancer, thyroid hormone in the treatment of thyroid neoplasms, and progestational drugs in the treatment of endometrial carcinomas.

Historically, cancer chemotherapy is a young field. Ehrlich (1899) initiated thinking along the lines of selective toxicity of drugs in the therapy of human ills.[1] His brilliant work in this field has been recorded, and the selective poisoning of trypanosomes with Trypan-Red was a milestone on the road of chemotherapy. Gillman reported last year on the first instance of the use of nitrogen mustard in the treatment of malignant disease.[2] This was accomplished in December, 1942, on a patient who had a malignant lymphoma. The first response was gratifying. Goodman *et al.* (1946), introduced the nitrogen mustards into clinical medicine.[3] An unfortunate occurrence in the harbor at Bari, Italy, in 1943, gave some impetus to the use of the mustards in the treatment of leukemias. An attack on allied shipping had led to the explosion of many vessels, some containing sulphur mustard. The immediate fatality rate was high, and later there were many unanticipated deaths among those not thought to have been critically injured. It was finally deduced that this latter group had died of severe bone-marrow depression following the absorption of sulphur mustard from the oily sea water. Farber (1948) reported the effect of Aminopterin on acute leukemia.[4]

In 1957 the concept of the cooperative clinical study was introduced. The consequences of these trials have been many fold: (A) cooperation among physicians on a national scale; (B) rapid testing of drugs, with adequate controls; (C) excellent clinical care for the patients being studied; and (D) the development of methods of administration and dosage schedules.

Most of the advances made in cancer chemotherapy have occurred during the past decade. That a difference exists between the neoplastic and the normal cell is indisputable. The gross examination of a frank malignancy leaves little doubt as to its reality. Microscopic examination further supports our initial impression, and the differences between normal and neoplastic cells are often apparent, some inflammatory and reparative processes excepted. When we approach the molecular level, it becomes increasingly difficult to distinguish the normal from the abnormal. There are slight quantitative differences, but distinct qualitative differences are yet to be found. When these latter differences become apparent, definite chemicals can be designed for the selective destruction of malignant neoplastic cells. Even without the knowledge of qualitative differences it is possible to find a drug which can successfully treat one or a variety of malignancies. Our current method of testing does occasionally reveal a drug of great usefulness.

HIGHLIGHTS IN THERAPY

An increase in survival among patients with solid tumors treated with chemotherapy, alone or combined with other modes of therapy, has been extremely gratifying. Reece (1953) introduced triethylene melamine (TEM), combined with irradiation, in the treatment of retinoblastoma in children. The improvements and survivals were notable. Since that time the same drug has been introduced intra-arterially, accounting for another significant increase in survival rate.[5] Krementz[6] introduced the technic of the indwelling intra-arterial catheter in the treatment of retinoblastomas. Hertz *et al.* (1961) reported on their experiences using an antimetabolite, amethopterin, in the treatment of choriocarcinoma of the uterus.[7] The patients treated had unequivocal evidence of metastatic disease. Thirty patients have been free of radiologic, physical or hormonal evidence of recurrence for periods ranging from six months to five years. Some women had been treated prophylactically by Li (1961), when following the delivery of moles, the chorionic gonadotrophins had not become negative within a week.[8] The use of amethopterin under these circumstances will usually result in a negative chorionic gonadotrophic titer in the urine.

The addition of chemotherapy to surgery and radiation in the treatment of Wilms's tumor has led to a respectable increase in survivals among children with this tumor. Farber[9] noted the radiosensitivity of the skin of children previously treated with actinomycin-D. This discovery suggested the use of this drug in the treatment of Wilms's tumor. The application of cancer chemotherapy in the preceding instances has played a distinct role in the control of the malignant process. Although cures are the ultimate aim in the use of any drug, we must not lose sight of the fact that a salutary change (palliation) is a desirable secondary goal. Perhaps we should include "hope" as an element in the palliation of disease.

OTHER APPLICATIONS

There are numerous reports in the literature alluding to the efficacy of 5-fluorouracil in the treatment of far-advanced cancers of the colon. Palliation as well as objective regression of tumor masses has been noted. Our personal experience supports this contention. Objective and subjective improvement has been noted following the treatment of far-advanced breast lesions with 5-fluorouracil. The literature contains reports of long-term survivals in patients with malignant hepatic tumors when treated with 5-fluorouracil. Control of adrenal carcinoma as evidenced by decreases in the size of pulmonary metastases and abdominal masses, has been obtained by the use of a drug called ortho-para DDD. Reports are plentiful of short-term control of far-advanced local primary, or recurrent neoplasms and their metastases through the use of other drugs such as cyclophosphoramide, and the plant extract vincoleukoblastine.

Unique methods are constantly being developed for applying the somewhat ineffective drugs. Isolation perfusion for the treatment of melanomas, localized to an extremity, is well established.[10] The intermittent or continuous intra-arterial administration of drugs to infuse the arterial supply of a tumor has been given considerable trial.[11] Far-advanced tumors so treated have disappeared in some instances. This apparently complete control persists for one to two months, with subsequent regrowth. More permanent control can be obtained by combining continuous intra-arterial chemotherapy and irradiation.[12]

DISCUSSION

Careful management of the patient with malignant disease can lead to increased survival. Karnofsky (1962) has clearly stated the case for aggressive treatment of patients with advanced cancer.[13] Many people insist on being treated for their neoplasms, and willingly accept the risk entailed in the use of investigative medications. Since the primary aim of the physician is to prolong life, an apathetic attitude manifested by the physician when confronted by a patient with far-advanced cancer, presents a contradictory image. We must all agree that there is a point beyond which noth-

ing further can be done, but this juncture varies tremendously from one physician to the next.

The drugs used in the treatment of malignant neoplasms are potentially dangerous. Many persons of my acquaintance have expressed a dislike for them because they have had unpleasant experiences with them. Unfamiliarity with the complications and with the management of those complications has been responsible for the disillusionment in most cases. Poor selection of patients and incomplete evaluation before the administering of medication create a potentially high mortality group. In the best of hands, a mortality rate of 4 per cent can be expected from the treatment.

There is a hint that under trying circumstances the surgeon may sometimes "cut some corners" because he has placed his reliance on postoperative cancer-chemotherapeutic agents. These drugs should not be relied upon as substitutes for complete surgical removal.

SUMMARY

Encouraging results have been obtained with cancer chemotherapeutic agents during their brief history. Follow-up studies may reveal cures in the area of the trophoblastic tumors. Adjuvant programs and programs in human pharmacology have allowed rapid evaluation and either utilization or discard of some drugs. Unique application of somewhat ineffective drugs through the use of isolation-perfusion and intra-arterial infusion has afforded considerable palliation and short-term control of far-advanced local malignancies. The combination of continuous intra-arterial infusion and irradiation in some cases gives added control to far-advanced primaries, or recurrences. More effective drugs will be developed, and through the many cooperative clinical groups, their prompt evaluation will be assured.

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Postgraduate Course in Adult and Child Neurology

S.U.I. COLLEGE OF MEDICINE, IOWA CITY
WEDNESDAY, MAY 13, 1964

The registration fee of $10 includes the cost of lunch. The course has been approved for seven hours of postgraduate-study credit by the AAGP.

9:10 a.m. Techniques of Neurological Localization
A. B. Baker, M.D., professor of neurology, University of Minnesota

9:45 a.m. Recent Developments in Diagnosis and Treatment of Seizures in Children
J. C. MacQueen, M.D.

10:30 a.m. Management of Headache and Face Pain
A. L. Sahs, M.D.

11:00 a.m. Clinical-Pathological Conference
A neurological case of interest

1:00 p.m. The Diagnosis and Differential Diagnosis of Brain Tumors
A. B. Baker, M.D.

1:30 p.m. Radioisotopic Encephalography in Diagnosis of Brain Tumors
R. T. Morrison, M.D.

1:50 p.m. Neck and Shoulder Pain of Neurological Origin
G. E. Perret, M.D.

2:40 p.m. The Clinical Approach to Mental Retardation
W. E. Bell, M.D.

3:10 p.m. Neurological Disorders Associated with Malignancies
R. J. Joynt, M.D.

3:40 p.m. Symposium—The Neurological Complication of Diabetes Mellitus
M. W. Van Allen, M.D., Moderator
R. W. Fincham, M.D.
D. B. Stone, D.P.M.

4:10 p.m. Question and Answer Period
A. L. Sahs, M.D., Moderator
A. B. Baker, M.D.
J. C. MacQueen, M.D.
G. E. Perret, M.D.
D. B. Stone, D.P.M.

Recent Developments in the Diagnosis of Pancreatic, and Alimentary and Biliary Tract Neoplasms

JOSEPH A. BUCKWALTER, M.D., and
LEO RATERMAN, M.D.
Iowa City

THE PURPOSE of this communication is to describe some of the newer and less familiar procedures used in the diagnosis of cancer of the pancreas and of the alimentary and biliary tracts. The procedures described will be evaluated from the viewpoint of the surgeon rather than from that of the endoscopist, radiologist, cytologist, isotopist or any of the other specialists who are interested in particular technics. This is not intended to be a comprehensive review. Key references to the relevant medical literature will be provided.

ENDOSCOPY

A substantial experience has now been accumulated with *the flexible fiberoptic gastroscope*. This instrument, which is 38 inches long, employs the principles of fiberoptics,[1] with light and image transmission accomplished through a bundle of 150,000 glass fibres which is 5/16 inches in diameter and traverses the length of the instrument. The glass fibres are arranged spatially so that the orientation of the fibers is the same at each end. Because the fiber bundle is unbound in the middle, it is completely flexible.

An important advantage of the fiberoptic gastroscope is its flexibility, which makes it much easier to pass than is the standard, semirigid gastroscope. When it is passed it causes the patient little discomfort, as compared with that which he experiences during the passage of the standard gastroscope. The flexibility of the new device has some other advantages. This feature has almost entirely eliminated the danger of perforation, and it has also facilitated the examination of areas within the stomach and duodenum that are not accessible to the standard gastroscope. The fiberoptic gastroscope can frequently be passed through the pylorus into the duodenum, or through a gastroenterostomy stoma. The antral and lesser-curvature areas are readily examined. Because light transmission through the fiberoptic gastroscope is approximately 2½ times better than through a standard gastroscope, the new instrument is more suitable for cine gastroscopy.[2]

The instrument has two important limitations. Because of its flexibility, control of the tip of the instrument within the stomach is difficult. Sometimes the gastroscopist has difficulty in orienting himself in the stomach, or in locating the specific area he desires to examine. A second of its limitations is poorer image-resolution than that which is achieved with the standard gastroscope.

It is our opinion that the advantages of the instrument outweigh its disadvantages, making it perferable to the standard gastroscope for most purposes. Hirschowitz, Balint and Fulton,[3] in reporting 500 examinations performed with the fiberoptic gastroscope, have pointed out the same advantages that we have found. It is their belief that the instrument has particular value in the diagnosis of superficial lesions of the stomach and duodenum, in the identification of post-gastrectomy disorders, and in the early recognition of the cause, site and activity of bleeding in the upper gastrointestinal tract. They have found it useful in the examination of the duodenal bulb.

Weisiger, Cramer and Zacharias[4] have compared their experience in 100 examinations performed with the fiberoptic gastroscope with their experience in 792 examinations performed with the standard, semi-rigid device. They were also impressed by the ease and safety of gastroscopy with the fiberoptic gastroscope, and with the little discomfort that it caused their patients. It was their experience that 10 per cent of the examinations performed with the fiberoptic scope were unsatisfactory, as contrasted with 8 per cent of the examinations performed with the standard instrument. Sixty-one per cent of gastric and pyloric ulcers were observed with both the fiberoptic and the standard scopes. The cause of upper-gastrointestinal tract bleeding was identified in 29 per cent

Dr. Buckwalter is a professor and Dr. Raterman a resident in the Department of Surgery at the S.U.I. College of Medicine.

of the patients examined with the fiberoptic scope, as contrasted with 31 per cent of the patients examined with the standard scope. In 20 per cent of the patients with marginal ulcer, the lesion was observed with the fiberoptic gastroscope, whereas it was visualized in just 17 per cent of the patients with this disorder who were examined with the standard scope.

During the past six months, a *fiberoptic esophagoscope* has been in use at the University Hospitals in Iowa City. The fiberoptic principles of light and image transmission through a bundle of hair-like glass fibers is the same as in the fiberoptic gastroscope. However, in contrast to the fiberoptic gastroscope, in which illumination is provided by a light source located in its tip, illumination for the esophagoscope is provided by an external light source and is transmitted through a flexible fiberoptic light carrier to the proximal end of the esophagoscope. The fiberoptic gastroscope is equipped with a lateral-viewing Amica prism and a compound lens, whereas the esophagoscope has no prism and views the field directly in front of the instrument.

The advantages of the fiberoptic gastroscope—the ease, comfort and safety with which the instrument may be passed—are even more striking in the fiberoptic esophagoscope. Since the esophagoscope, they can't be done as satisfactorily as rather than in the stomach, there is no problem related to controlling the end of the instrument. Image resolution is still not so sharp as with the standard esophagoscope, however, and although biopsies can be done with the fiberoptic esophagoscope, they can't be done as satisfactorily as through the conventional esophagoscope.

Based on our experience with this instrument to date, it is our opinion that the fiberoptic esophagoscope is a valuable instrument that can be recommended to the clinician dealing with esophageal problems.

The fiberoptic gastroscope and esophagoscope cost about $1,600 each, and the external light source used with the esophagoscope, sigmoidoscope and coloscope costs about $400.

Other instruments employing the fiberoptic principles have been and are being developed. Turell has described three such instruments: (1) *a sigmoidoscope* with distal illumination (the Turell Sigmoidoscope); (2) a sigmoidoscope with proximal illumination; and (3) *a flexible fiberoptic coloscope*.[5] A flexible fiberoptic light carrier transmits an intense beam of light from a separate light source to each of these instruments, as in the fiberoptic esophagoscope. Turell has found that the sigmoidoscope with the proximal light source is superior to the conventional sigmoidoscope in that it provides better illumination and in that the light is "cold," thus freeing the user from the nuisance of burned-out bulbs.[6] He feels that the coloscope is a promising instrument, but that there are several unsolved problems concerning its design and use. It is probable that a fiberoptic coloscope will be developed which will make endoscopy of the entire colon a practical and useful procedure. Another interesting instrument which is being developed and evaluated is a flexible *fiberoptic choledochoscope* for examining the inside of the common duct.[7]

Peritoneoscopy is an old procedure which has proved safe and valuable, particularly in the diagnosis of metastatic disease in the liver. It is also useful in the diagnosis of abdominal masses of unknown origin.[8] This procedure is little more time consuming, complicated or distressing to the patient than a paracentesis, and it may provide information (a biopsy can be done) which will obviate an otherwise-indicated exploratory laparotomy.

RADIOGRAPHY

Selective celiac and superior-mesentery arteriography has been advocated as a useful tool in the diagnosis of pancreatic and alimentary-tract carcinomas. The catheter is introduced percutaneously into a femoral artery and, under fluoroscopic control, is manipulated into the celiac artery. The contrast medium consists of 10-20 cc. of 50 per cent Hypaque, and serial radiography is performed in the anteroposterior, lateral and oblique positions.

In 1958, Odaman presented a scholarly review of his experience with 61 *percutaneous selective angiograms* of the celiac artery done in 58 patients, and his experience with the procedure in dogs.[9] He concluded that the technic is useful in cancer of the stomach, particularly in indicating the extent of the lesion. He also was able to demonstrate hepatic metastases.

Meaney and colleagues performed *selective splanchnic arteriography* in 25 patients with obscure abdominal pain.[10] Three patients had similar arteriograms indicating narrowing of the celiac artery or its branches, and at exploration these three patients had carcinoma of the body of the pancreas. These authors described three findings suggestive of pancreatic neoplasms: (1) displacement of vessels; (2) hypervascularity or "tumor stain"; and (3) "enhancement" or stenosis of the vessels. Glenn and colleagues found *selective celiac and superior-mesenteric arteriography* helpful in the diagnosis of carcinoma of the pancreas and stomach, and metastatic disease of the liver.[11] We have had no experience with this procedure, but it appears to us to be promising in the evaluation of the patient with obscure abdominal pain, in whom all the conventional x-ray and laboratory studies have been inconclusive.

Translumbar aortography occasionally may be helpful in diagnosing pancreatic tumors and other retroperitoneal lesions. Bieber and Albo have reported a case of cystadenoma of the pancreas diagnosed preoperatively by translumbar aortography.[12]

Percutaneous transhepatic cholangiography has been recommended as an aid in the diagnosis of carcinomas arising in the biliary tree. Under local anesthesia, with the patient supine on the x-ray table, a No. 20 aortogram needle is introduced into the abdominal wall in the mid-clavicular line just below the right costal margin. The needle is tilted at a 45-degree angle toward the head. With the patient apneic, the needle is then passed to its full depth into the liver substance. The patient is then permitted to breathe normally. With constant suction exerted by a syringe attached to the needle, the needle is slowly withdrawn from the liver substance. When bile is encountered, the needle tip is assumed to be within a dilated bile duct. At this point, withdrawal is stopped, and 20-60 cc. of 50 per cent Hypaque is injected. If no bile is encountered on the first attempt, the needle is passed again into the liver at a different angle, and the procedure is repeated. If bile has not been obtained after four attempts, it is probable that the patient does not have extrahepatic biliary obstruction.

Flemma *et al.*, who employ the technic just described, list the following indications for percutaneous transhepatic cholangiography: (1) postcholecystectomy symptoms; (2) demonstration of calculi and localization of carcinomas; and (3) differentiation of hepatocellular from obstructive jaundice.[13] They were able to differentiate carcinoma from stones or from strictures of the bile duct system by means of percutaneous transhepatic cholangiography. Another advantage of this procedure is that it provides bile for culture. Bile leaks and internal bleeding were the complications that Flemma *et al.* encountered. Neither complication was of consequence, since all of their patients were operated upon soon after the procedure, and no deaths occurred.

Shaldon, Barber and Young have suggested an attractive modification of the technic just described.[14] A piece of polyethylene tubing of the proper length and diameter is fitted over an aortogram needle. The needle covered with tubing is then passed 8-10 cm. into the liver substance, and the needle is withdrawn, leaving the tubing in the liver. The tubing is then slowly withdrawn until bile is encountered. This procedure is less traumatic to the liver. The tubing has been left in the liver for as long as two weeks, draining as much as 600 cc. of bile daily and thus decompressing the obstructed biliary system.

These authors report 22 satisfactory cholangiograms in 30 attempts. Six of the eight patients in whom no cholangiograms were obtained were subsequently shown to have intrahepatic rather than obstructive jaundice. In only two patients with obstructive jaundice did they fail to obtain a cholangiogram.

In general, percutaneous transhepatic cholangiography should be done in patients in whom surgery is anticipated later the same day, unless a catheter is used as advocated by Shaldon *et al.* No complications occurred in patients with hepatocellular jaundice in whom no cholangiograms were obtained. The chief indication for transhepatic cholangiography is the presence of jaundice with a differential diagnosis of postoperative stricture or carcinoma.

Lymphography has proved useful in demonstrating metastatic involvement of abdominal lymph nodes, and may possibly be useful in differentiating retroperitoneal masses and retroperitoneal lymph-node metastases. One performs the procedure by injecting contrast medium, usually ethiodol, into lymphatic trunks which he has located by injecting colloidal blue dye (patent blue violet) interstitially in the web between the toes. The technic and the applications of lymphography have been described by Fischer.[15]

From behind the iron curtain has come an interesting report describing the use of *a double-contrast spray method* in the diagnosis of gastric cancer.[16] With the patient in the sitting position, one inflates the stomach through a catheter. The patient is then placed in the supine position, and a radiograph is taken. The author points out that frequent insufflation of the stomach may of itself reveal a pathologic process. For this examination, the stomach is inflated to a pressure of about 250 mm. Hg, and the mucosa of the stomach is then sprayed with barium, preferably colloidal barium. In order to achieve the objective of coating the entire stomach with a thin layer of barium, the spraying is frequently done under fluoroscopic control. Excellent photographs illustrating the diagnostic precision of this technic have been included in the communication. This technic has not been widely used in the United States.

CYTOLOGY

Cytologic studies, a routine part of gynecologic examinations, have been used with varying degrees of success in the diagnosis of gastrointestinal-tract disease. The factors which make their application less reliable and therefore less popular in gastroenterology are: (1) the relatively large surface area to be screened; (2) the inaccessibility of certain portions of the gastrointestinal tract; and (3) the presence of food, debris and intestinal juices which make interpretation difficult. Nevertheless, except for the jejunum and ileum, all parts of the gastrointestinal tract have been subjected to cytologic examination. The methods employed and results obtained will be briefly discussed.

The Papanicolaou technic of staining has been found to be the most accurate. Indeed, the diagnostic accuracy of cytology in esophageal lesions is said to exceed 90 per cent.[17, 18] It does, however, require meticulous preparation, care in collecting the specimen, and the services of an experienced

cytologist. The following methods of specimen collection are used with the Papanicolaou technic. The stomach is first aspirated and lavaged. The Levin tube is then withdrawn to the 40 cm. level, and 50 cc. of saline is forcefully injected and aspirated. This procedure is repeated at 5 cm. intervals as the Levin tube is gradually withdrawn, until the entire esophagus has been traversed.

A similar degree of accuracy has been reported for gastric cytology.[19, 20] For the performance of gastric cytology, a Levin tube is placed in the stomach after an overnight fast. Two saline lavages are performed, and the fluid is discarded. Five hundred cubic centimeters of saline is then placed in the stomach, and the patient is rotated every two minutes. After eight minutes, the specimen is aspirated in ice, centrifuged and stained. An occasional source of error is a rapidly healing benign ulcer shedding fibroblasts that are difficult to differentiate from neoplastic cells.

Of the available methods for obtaining a definite preoperative diagnosis of carcinoma of the biliary tract, duodenum and pancreas, cytology is probably the most successful of all. Its use seems indicated more often than it is performed. The diagnostic accuracy is increased when the cytologic examination is done in conjunction with the *secretin test,* for the synchronous administration of secretin provides information about the functional state of the pancreas as well as producing a "flushing out" effect upon the entire biliary tree. The deficiencies of the secretin test by itself are thus overcome—namely its failure to distinguish between carcinoma and chronic pancreatitis, as well as to diagnose carcinoma in the presence of preexisting pancreatitis. Duodenal cytology employed without secretin stimulation has yielded poor results, especially for lesions in the tail of the pancreas.[21, 22] A double-lumen gastroduodenal tube is passed under fluoroscopic control. Its distal tip is placed at the ligament of Treitz, and its proximal tip at the gastric antrum. The stomach is continuously aspirated in order to prevent contamination of the specimen by gastric juice. After a 20-minute basal collection of duodenal juice, 80 units of cholecystokinin is given intravenously, and a 10-minute sample is collected. Thereafter, one unit of secretin per kilogram of body weight is administered, and samples are taken at 10-minute intervals for one hour. In the hands of some investigators, the above method has been correct in 95 per cent of cases. Others have reported the accuracy to be about 60 per cent.[17, 18]

Exfoliative cytology has proved useful in the diagnosis of large-bowel lesions that are out of reach of the sigmoidoscope and in which the barium enema has been negative. The results hinge to a large extent upon the thoroughness of the colon preparation. The following method has been found satisfactory.[17, 18, 23] Two ounces of castor oil are given 24 hours prior to the test, and on the night before and the morning of the test, tap-water enemas are given until they return clear. Then just prior to the exam, 1.5 to 2.0 L. of Ringer's solution is used for rapid washing. Finally, an enema containing 500-1,000 cc. of acetate buffer and 14-21 mg. of salt-free chymotrypsin is introduced and retained for 5-10 minutes. The recognition of malignant cells is not difficult, once an adequate smear has been obtained. The method described above is reported to be 66 per cent accurate.[23]

An interesting modification of this method of colonic cytology has been developed by Spjut, Margulis and Cook.[24] *Polysiloxane elastomer* (silicone), introduced into the colon as an enema, polymerizes and solidifies to form a spongy, compressible cast of the bowel. Polypoid lesions and ulcers leave impressions in the cast. After expulsion of the enema, the cells adherent to the cast are washed off and subjected to the usual cytologic examinations. According to the authors, this method of collection is somewhat less accurate than multiple saline washings, the main reason being that the enema represents only a single contact with the neoplasm.

In the search for rapid-screening methods, *fluorescence microscopy* has found an application in cytology, either after exfoliation utilizing the acridine orange, acid fuchsin and berberine sulphate groups of stains, or prior to exfoliation employing tetracycline.[25–28] The fluorescence technics are said to have an accuracy that compares favorably with those of the conventional methods, they have the advantage of a shorter preparation time, and they make the screening procedure simpler, faster and less tiring to the eyes.

The fluorescence technic employing acridine orange is based on the selective affinity of this dye for nucleic acids. Desoxyribose nucleic acid (DNA) fluoresces yellow to whitish green, and ribonucleic acid (RNA) fluoresces red. An increase in the relative amount of RNA is characteristic of cells with a high protein synthesis, such as malignant, regenerating, secretory and embryonic cells. The amount of the fluorescence is directly proportional to the amounts of the nucleic acids in the cells, and the cytoplasm of malignant cells thereafter tends to fluoresce red.

The methods of sample-collection are the same as for conventional cytology. The smears are stained with acridine orange dye, and are examined under a mercury-vapor lamp. Grubb and Crabbe[25] examined 87 gastric washings by both the conventional method and fluorescence microscopy. They were able to diagnose malignancy correctly in 76 per cent of cases using fluorescence, and in 67 per cent of cases using the Papanicolaou stain.

A number of years ago, the observation was made that *tetracycline imparts ultraviolet (UV) light fluorescence* to tissues which have taken up

the drug. Whereas tetracycline rapidly diffuses into cells of all tissues, with the exception of the brain, it is washed out again from normal tissues within 24 hours after the administration of the drug is discontinued. Malignant tissues, on the other hand, have the property of retaining significant concentrations, and therefore have fluorescent properties for several days. This difference in duration of fluorescence forms the basis for the test. The mechanism of the longer retention of tetracycline by malignant tissues is not quite clear, for the drug is found principally in the stromal cells of the tumor, instead of in the malignant cells themselves. Tetracycline appears to combine with the mitochondria of the cells.

For the purpose of this test, tetracycline is administered in doses of 250 mg. t.i.d. for five days. The specimen is collected 30 hours after the last dose, and after a 12-hour fast. The stomach is lavaged with 400 cc. of saline with 5 per cent $NaHCO_3$ added in order to bring the pH to between 6 and 7. This pH range gives the best fluorescence. The specimen is centrifuged, filtered, and allowed to dry on the filter paper before being examined for fluorescence under an UV light.

Fifty-eight patients with gastric ulcers were examined, and 10 malignancies were correctly diagnosed.[29] There were no false negatives, but there were three false positives. In another series, a double study was used—examinations of the washings by both tetracycline fluorescence and conventional cytology. The tetracycline method correctly diagnosed 20 of 21 benign ulcers, but was positive in only two of seven malignant ulcers.[30] The Papanicolaou method was correct about all 21 benign ulcers and about five of the seven malignancies. The drawback of the tetracycline method of fluorescence is that it is somewhat less accurate than conventional staining methods. It is believed that some false positives are due to prolonged tetracycline retention in rapidly-healing benign ulcers.

ISOTOPES

Radioactive isotopes have been used in detecting liver metastases and in differentiating between intra- and extrahepatic obstruction in jaundiced patients. A variety of radioactive substances are suitable for *scintillography*.

Ratzkowski *et al.* have described a method employing I^{131} rectally.[31] Fifty microcuries of I^{131} in 10 cc. of water is administered by means of a rectal catheter with its tip located at 10 cm. A scintillation counter is placed in contact with the skin at the intersection of the right subclavicular line and a horizontal line passing through the xiphoid. Counting begins with the start of subcutaneous administration of I^{131}, and the rate of increase of I^{131} in the liver is determined. The authors found that patients with hepatic metastases reached equilibrium after 14-30 minutes, whereas normal patients reached equilibrium in 1-9 minutes. The advantage of this test is its relative simplicity and ease of performance, but it is not sensitive enough to pick up microscopic metastases.

Stirrett *et al.* used a similar technic employing the intravenous administration of 300 microcuries of I^{131}-labeled human serum albumin.[32] A scintogram is done 24 hours later. The test can be performed wherever thyroid-function studies are done. Its interpretation is based on the same principle. The authors report 96 per cent accuracy.

Based on the observation that liver tumors lose the capacity to concentrate vitamin B_{12} and have an uptake of about 20 per cent of the amount that is normal for liver tissue, Stein reports a study using Co^{60}-labeled B_{12}.[33] From 0.5 to 2.0 microcuries of Co^{60}-labeled B_{12} is given intravenously, and a scintogram is done from seven to 10 days after injection. Metastases and other space-occupying lesions are indicated by low-counting areas over the liver. As is true of the isotope methods previously mentioned, this method requires that the lesion be at least a few centimeters in diameter if it is to be detected. Also, the technic does not distinguish between benign and malignant lesions.

The use and limitations of *the I^{131} rose bengal liver function test* have been described by Schuman[34] and by Taplin *et al.*[35] The test measures the action of the liver in clearing the isotope from the blood stream. The radioactive substance is injected intravenously in a dose of one microcurie per 15 Kg. of body weight. Scintillation detectors connected to rate meters are placed in three locations: (1) against the head, to measure the concentration in the general blood stream; (2) over the liver, to measure liver uptake; and (3) over the left lower abdomen, to measure the rate of excretion into the gut. The authors found the test valuable in the diagnosis of pure extrahepatic obstructive jaundice. In this case, no rise in the abdominal counting rate is seen one hour following injection of the isotope. The test was poor in differentiating among chronic liver disease, acute hepatitis and cases of partial extrahepatic obstruction.

A more complicated method combining *venography and scintillography* has been described by Helander *et al.*[36] Under fluoroscopic control, a catheter is introduced into the femoral vein and advanced into the hepatic vein. From 0.5 to 1.0 microcuries of Au^{198} is then injected, and scintillograms are made. Venograms are also done, using any one of the commonly employed contrast media. The interpretation of this test is based on finding areas of reduced density on the scintillograms, combined with distortions of the vascular pattern on the venograms. In the authors' experience, the test had an accuracy of 81 per cent.

Ackermann *et al.*[37] and Siegel *et al.*[38] have described a method of multiple organ screening by means of *diagnostic radioautography*. This test is

based on the selective uptake of P^{32} by malignant tumors. Five hundred microcuries of P^{32} are injected intravenously. Two hours later, a rubber balloon coated with an elastic latex-base photosensitive emulsion is inserted into the stomach. The balloon is then inflated until the patient complains of fullness and it is left in place for approximately four hours. The authors were able to make the correct diagnosis in 25 of 33 malignant gastric lesions. There were eight false positives among 64 benign ulcers tested. For accurate diagnosis, the balloon must make direct contact with the malignant tissue, and this is impossible in some antral-lesion cases.

Many other variations of the previously described radioisotope tests have been described in the literature. Most of them have failed to gain widespread acceptance by clinicians, for the simple reason that they are either too cumbersome to perform or that the information derived from them is not reliable enough for use in determining the management of the patient.

OTHER METHODS

Every object having a temperature above zero degrees centigrade emits infra-red energy in the form of invisible light. Instruments have been developed which make it possible to collect this energy, transform it into proportional electric impulses, and convert it into visible light in the form of a picture or thermogram. Thermograms are quantitative representations of the objects' surface temperatures, since the amount of infra-red radiation is a function of the temperature of the object. *Thermography* has been most widely and effectively applied in the diagnosis of diseases of the breast.[39] The applicability of thermography in the diagnosis of intra-abdominal disease is currently being studied. The indications are that it may be useful in the diagnosis of intra-abdominal inflammatory disease, but that it probably will not prove useful in the diagnosis of intra-abdominal neoplastic disease.

Ultrasonic echo pulsing technics have been applied to the diagnosis and treatment of various disease states. Holmes and Howrey describe the technics that they have used in the diagnosis of abdominal disease.[40] Their instrumentation yields a pictorial representation of the area studied. These authors found that cysts, abscesses, local infections, tumors, foreign bodies and accumulations of fluid could be detected by ultrasound. In their opinion, this technic is at present most useful in the localization of liver lesions for purposes of biopsy.

The exfoliation of cells by the stomach has been used in the diagnosis of gastric lesions, as has previously been mentioned in this communication. Determination of the free hydrochloric acid and pepsin content of the gastric juice is helpful in differentiating a peptic ulcer from a gastric cancer. Glass reports that *paper-chromatographic studies of gastric juice* reveal a consistent pattern for patients with gastric carcinoma, characterized by a high albumin peak.[41] This reflects the leak of albumin into the stomach which occurs with gastric carcinoma. Thus, Glass thinks paper chromatography a useful diagnostic tool for the clinician in the diagnosis of gastric carcinoma. The work reported by Andriesse and Stroes, indicating a characteristic *serum glyco-protein distribution* in patients with gastric cancer, suggests another biochemical method which may ultimately prove useful in the diagnosis of gastric cancer.[42]

SUMMARY

The fiberoptic gastroscope is recommended to the clinician as a valuable diagnostic tool, and it is probable that the fiberoptic esophagoscope will prove of equal or even greater value. The usefulness and advantages of the fiberoptic sigmoido- and coloscopes have not as yet been established. It is suggested that peritoneoscopy should be remembered and more often used than is the case today.

Selective celiac and superior mesenteric arteriography at the present time are clinical research tools, rather than established, practical diagnostic procedures. Percutaneous transhepatic cholangiography is a practical and valuable diagnostic tool in properly selected cases. Lymphography has limited clinical applications that may be expanded.

Cytologic technics at the present time are useful in the diagnosis of lesions of the esophagus, biliary tree, stomach and pancreas. The value of tetracycline fluorescence as a cytologic technic remains to be established.

In the diagnosis of pancreatic, biliary and alimentary-tract neoplasms, the clinical usefulness of the procedures involving the use of isotopes and the other procedures which have been described remains to be established.

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S.U.I. Medical Student to Work With Schweitzer

Mr. Dale H. Weber, a senior in the S.U.I. College of Medicine, has been awarded a foreign fellowship which will permit him to work with Dr. Albert Schweitzer at his hospital near Lambarene, in the Gabon Republic, Africa. He is one of 29 American medical students chosen by the Association of American Medical Colleges for a program financed by Smith, Kline and French Laboratories.

Mr. Weber is to spend March, April and May at Dr. Schweitzer's hospital, which serves an area several hundred miles wide and inhabited by 20 African tribes. It is constantly filled beyond its 400-bed capacity. He will assist the staff's six physicians and 17 nurses with all hospital work.

He is 32 years of age, a graduate of Iowa State University, at Ames, and has a wife and five children. He will receive credit toward his medical degree for the months he spends in Lambarene, as well as learning a great deal about tropical medicine.

Now entering its fifth year, the Smith, Kline & French program was established to enable American medical students to broaden their medical horizons in cultures far different from their own. During the past four years, 123 fellows have served at hospitals and clinics in 40 countries of Africa, Asia and Latin America.

Hematuria:

A Sign of Urinary Tract Neoplasm

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Hematuria is a common symptom of urinary tract disease, and all too frequently its importance is underestimated by the patient and the physician alike. It must be emphasized that hematuria is not a clinical entity or disease, but rather that it is a sign. Only through urologic investigation can the underlying etiology be determined. Unfortunately, however, there is procrastination in many instances. The serious nature of the problem is apparent from the work of Lower, who anaylzed 798 consecutive cases of hematuria and found that new growths were responsible in 32 per cent of the cases, tuberculosis in 11 per cent, and calculous disease in 16 per cent. Fifty-nine per cent of these patients were suffering from a severe disease demanding early diagnosis. Once confronted with this problem, it is the physician who assumes the obligation and responsibility to prove beyond a doubt that no serious lesion is present.

Hematuria may be of two types: (1) microscopic and (2) gross. Larcom and Carter studied a single voided urine from each of 3,000 healthy individuals applying for employment. In 2,484 they found no erythrocyturia. In 2 per cent, 2-3 erythrocytes were present per high-power field, and in 0.7 per cent, 4-5 erythrocytes were found. They concluded that more than two red blood cells per high-power field constituted an abnormal loss.

The problem of investigating microscopic hematuria is not easy. In a patient who has no urologic symptoms, a repeat urinalysis should be performed, and if the bleeding persists, it must be handled as a case of gross hematuria. In such cases of microscopic hematuria, neoplasm will be found in 2 per cent of cases, and in 38 per cent a non-neoplastic lesion will be found. No etiologic factor will be discovered in 60 per cent of cases. Gross hematuria, on the other hand, always necessitates an immediate, complete urologic examination. Especially in men, one may often obtain an idea of the site of the lesion from an accurate description of the nature of the hematuria. Initial hematuria is characterized by the appearance of blood at the start of micturition, though the remainder of the urine that is passed is clear. In such cases there is usually a lesion in the prostate or prostatic urethra. In terminal hematuria, however, clear urine is passed first, and at the end of micturition the urine becomes bloody. This sequence is associated with lesions in the prostatic urethra, bladder neck or trigone. In total hematuria, the urine is bloody throughout urination, and the bleeding arises from lesions in the bladder or upper urinary tract. Blood continuing to come from the meatus between voidings means that the lesion is distal to the external sphincter.

Etiologically, hematuria may be divided into three broad categories: (1) hematuria associated with systemic disease; (2) hematuria associated with urinary tract afflictions; and (3) hematuria secondary to diseases of neighboring organs involving the urinary system. Figure 1, from Herman's text, illustrates these various causes. In Kretschmer's review of 935 cases of hematuria, it is rather appalling to note that the average interval between the appearance of the bleeding and the diagnosis was 2.39 years. Of those cases, 833 were available for detailed study, and it was found that 39.3 per cent were bleeding from renal causes; 26.8 per cent were bleeding from bladder lesions; 15 per cent were bleeding from prostatic lesions; and in 1.08 per cent the hematuria was due to general disease. In these cases, tumor was the most common etiologic factor producing the hematuria.

In reviewing 1,600 cases with hematuria, Higgins found the most frequent causes to be calculus, neoplasm, infections, tuberculosis and glomerulonephritis. In about 3 per cent of the cases, no cause was found. Bumpus, in following 155 cases of essential hematuria for 5-20 years, found that definite urinary-tract disease developed in only six cases. He concluded that in many instances kidneys bleed without demonstrable pathologic changes, and he coined the term *renal epistaxis* to describe this condition.

Hematuria is more common among men than women. DeBenham investigated 742 consecutive cases and divided them into two groups. Group I

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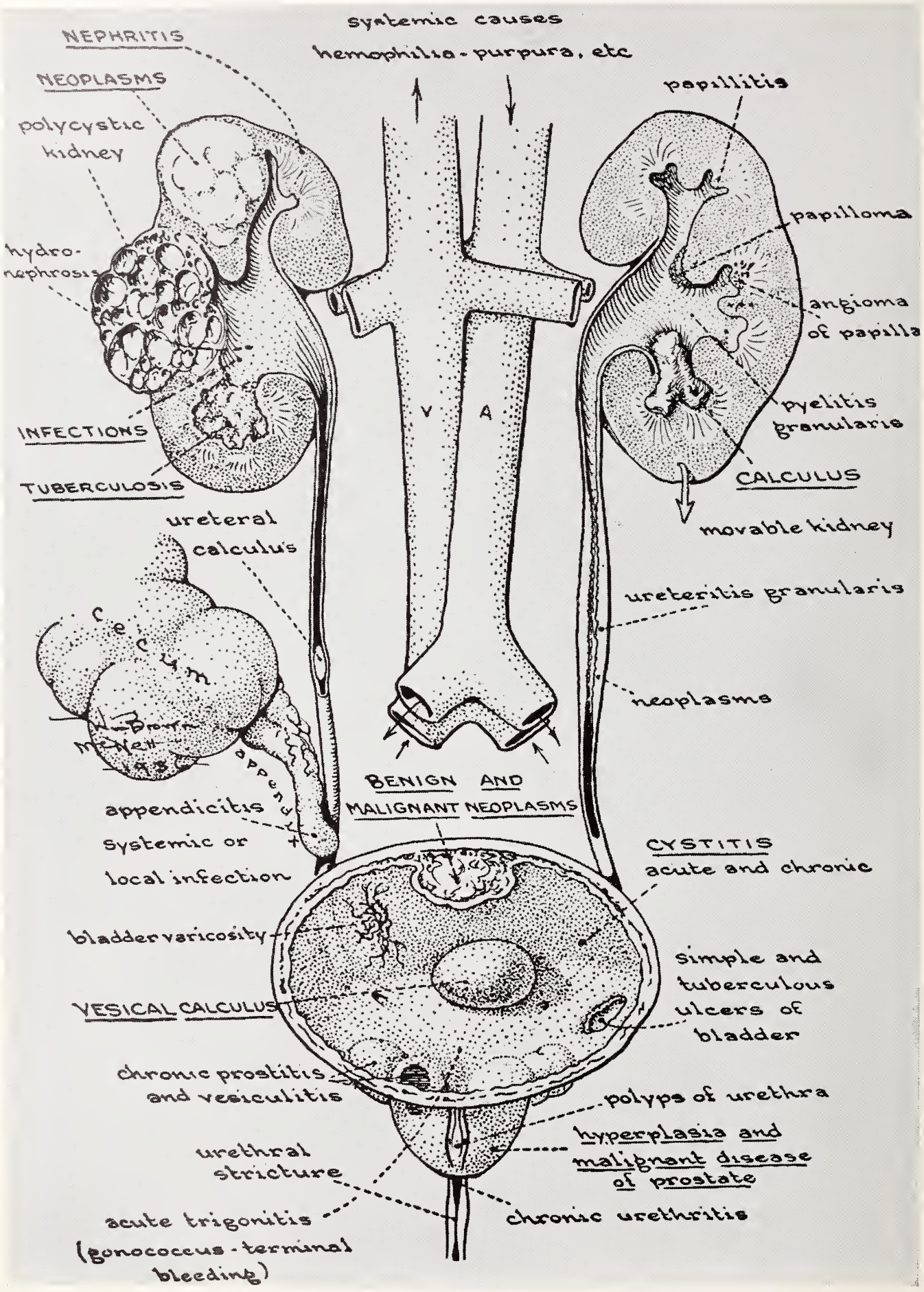


Figure 1. From Herman, The Practice of Urology, illustrating the many possible causes of hematuria.

consisted of 510 males, and group II consisted of 232 females. In the female group, 46.5 per cent of the cases were due to infection, but in the male group only 16 per cent of the cases were attributed to inflammation. In group I, 130 patients were over the age of 60 years, and in 84 per cent of them the hematuria was secondary to carcinoma of the bladder or prostate, benign prostatic hyperplasia, or urethral stricture.

The age of the patient is an important clinical fact in the consideration of a case of gross hematuria. The condition is rare in infancy and childhood, but when it occurs it is usually secondary to an infection or a congenital abnormality of the urinary tract. In this age group neoplasms are uncommon, and even in cases with neoplasm, bleeding is not a common symptom. Infections such as pyelonephritis and cystitis continue to be the predominant causes of urinary-tract bleeding in young adults through the age of 40. In the fifth decade neoplasm becomes the most common cause in men, but inflammatory causes remain the most common in women, though they reach their peak during the fourth decade. In the sixth decade, neoplasms become the most frequent causes of hematuria in both sexes. Among men in their seventh decade, benign prostatic hypertrophy is the most common cause of hematuria, followed closely by carcinoma of the prostate.

The value of prompt and early diagnosis is enormous to a patient with hematuria. The etiology of the hematuria can be established in the great majority of cases if the physician combines the history and physical examination with appropriate laboratory procedures. Roentgenologic visualization of the urinary tract, combined with endoscopy, is invaluable in localizing the lesion. In those cases in which malignancy is involved, early diagnosis provides the only chance for cure.

CASES

The following cases illustrate the similarity of symptomatology and reemphasize the need for thorough investigation of these cases as a means of detecting the underlying etiologies.

Case 1. A five-year-old female child was admitted to the hospital with a history of having fallen three weeks prior to admission. Following the accident, she developed intermittent hematuria, and the referring physician confirmed that fact. She also had noted dull pain in the left flank and nausea.

On physical examination, an orange-sized mass was palpable in the left flank. Urinalysis showed only 1-2 red blood cells per high-power field. Chest x-ray was normal, and excretory urograms showed a normal right kidney and a mass deformity of the lower pole of the left kidney. These findings were confirmed by retrograde pyelography. Subsequently, left nephrectomy was performed, and a nephroblastoma was removed (Figure 2).



Figure 2. The typical mass deformity of the left kidney due to nephroblastoma. The surgical specimen has been superimposed.

Although hematuria is not a prominent symptom in Wilms's tumor, the minor trauma probably initiated bleeding from an abnormal kidney in this case. Evaluation was prompt, and the correct diagnosis was established early.

Case 2. An 80-year-old female was seen on referral for persistent microscopic hematuria. She also complained of a dragging pelvic pressure sensation and some stress incontinence. For many years she had had arthritis and had received periodic cortisone injections for it.

Physical examination was normal except for a mild cystourethrocele and a limitation of motion in the hips. Urinalysis revealed 25 red blood cells per high-power field. Excretory urograms showed a normal right kidney and a calcified mass in the lower pole of the left kidney. The chest x-ray was normal. Cystoscopy was normal, and left retrograde pyelograms confirmed the mass lesion of the left kidney (Figure 3). A clear-cell carcinoma with invasion of the renal vein was found at the time of nephrectomy.

In this case, persistent microscopic hematuria led to an investigation of the urinary tract. The hypernephroma was relatively silent symptomatically, but had extended to the renal vein by the time the diagnosis was established.

Case 3. A 50-year-old man entered with a history

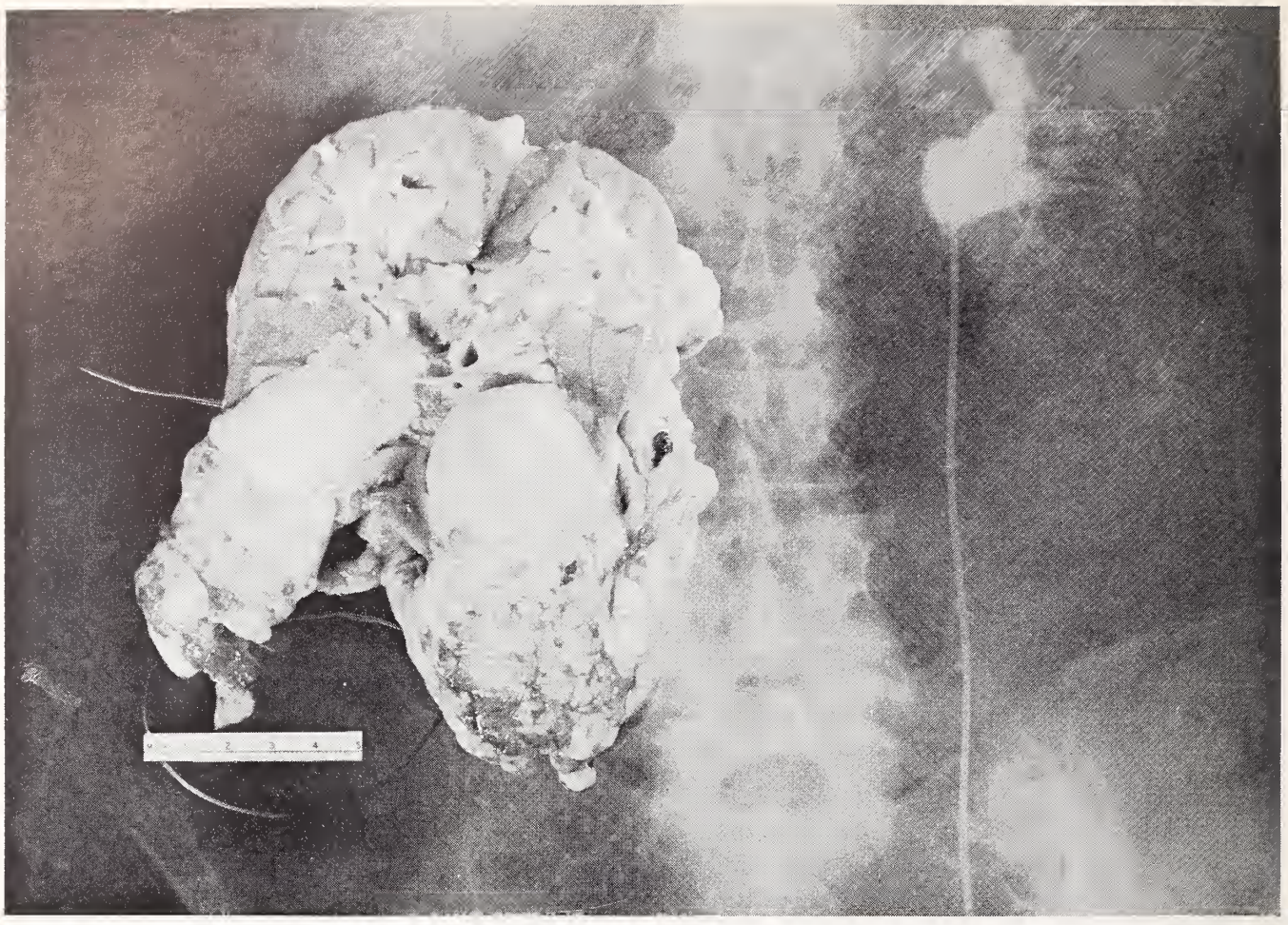


Figure 3. A large lower-pole hypernephroma superimposed over the retrograde pyelogram, showing the mass deformity of the kidney with an area of calcification in the tumor.

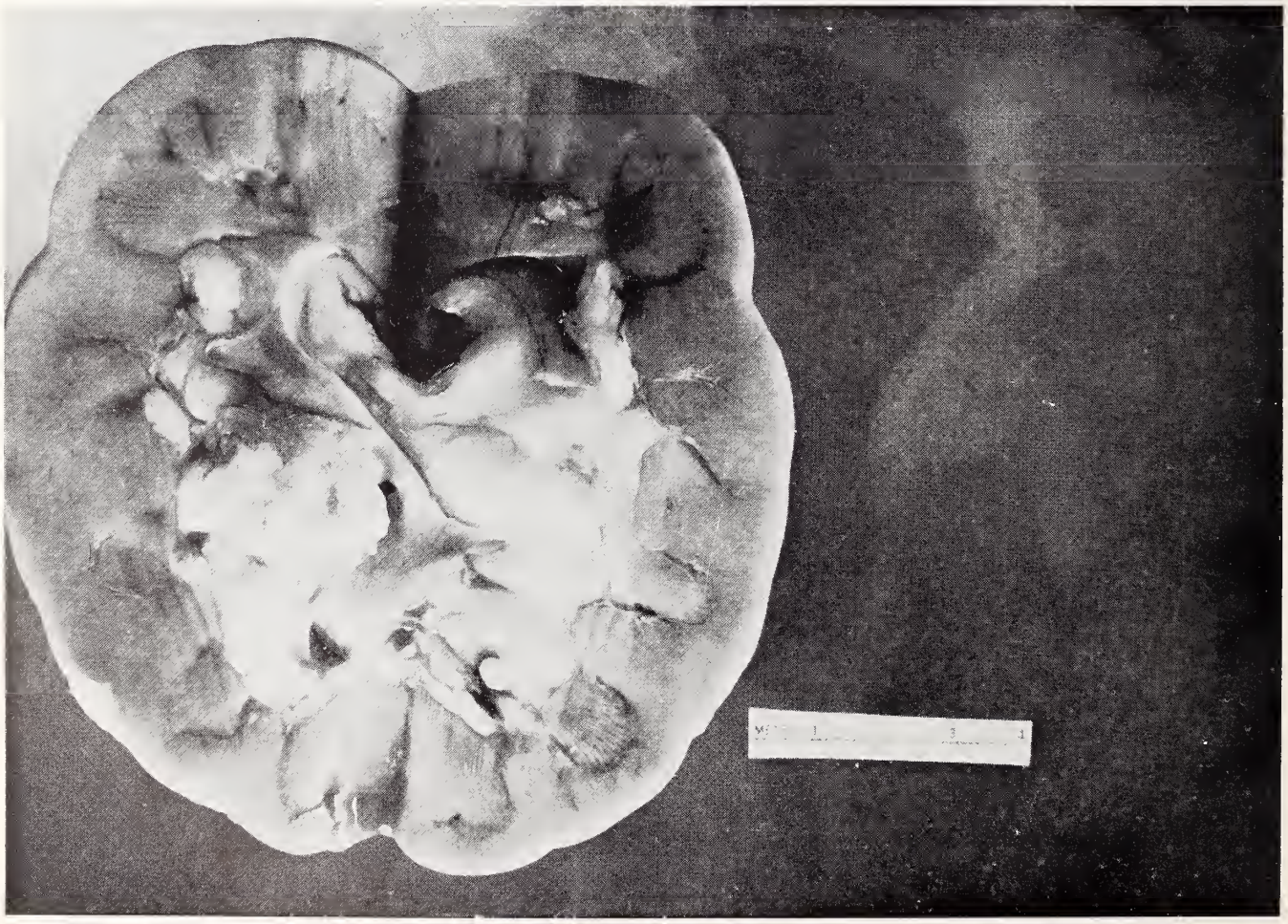


Figure 4. The retrograde pyelogram shows a filling defect in the renal pelvis. The gross specimen is a papillary transitional cell carcinoma of the renal pelvis.

of intermittent initial hematuria. This condition had always cleared after a day or two of sulfa therapy, but because of its recurrence a urologic evaluation was obtained.

Physical examination was normal. Urinalysis showed 40-60 red blood cells per high-power field. Excretory pyelograms showed a normal right kidney and a shaggy filling defect in the left renal pelvis. The chest x-ray was normal. Cystoscopy was normal, and left retrograde pyelograms confirmed the left renal pelvic filling defect. Cytology of urine from the left renal pelvis was positive for malignant cells of the type commonly seen with this neoplasm. A left nephroureterectomy and removal of a cuff of bladder were performed as surgical therapy for a papillary transitional-cell carcinoma of the renal pelvis (Figure 4).



Figure 5. The persistent filling defect in the cystogram is suggestive of a papillary transitional-cell carcinoma of the bladder.



Figure 6. Filling defect in the anterior urethra secondary to carcinoma of the urethra.

Even though this was an upper urinary tract lesion, the presenting symptoms were similar to those associated with lower urinary tract bleeding. The clinical interpretation of the site of bleeding may be entirely misleading, as is illustrated by this case. Adequate roentgenographic visualization must be obtained before the anatomic site of bleeding can be determined.

Case 4. A 54-year-old female entered the hospital with a complaint of total gross hematuria present intermittently during the preceding six weeks. Physical examination was normal. Excretory urograms showed normal upper urinary tracts. A persistent filling defect was noted on the right side of the excretory cystogram (Figure 5). A walnut-sized papillary transitional-cell carcinoma was found at cystoscopy, and was treated by transurethral resection.

Prompt diagnosis had been delayed by the patient's reticence about seeking medical attention. Because of the clinical stage of this tumor, good results may be expected following transurethral resection of the tumor.

Case 5. A 65-year-old man had been bothered



Figure 7. A transitional-cell carcinoma of the urethra which produced a bloody urethral discharge.

by symptoms of bladder-neck obstruction for several years. He also had had intermittent episodes of initial hematuria with some dysuria. Physical examination showed the prostate to be moderately enlarged and benign per rectum. Urinalysis showed 10-20 white blood cells and 5-10 red blood cells per high-power field. Excretory urograms showed normal upper tracts, with some hooking of the distal ureters and incomplete emptying of the bladder on the post-voiding film. The residual urine was 300 cc.

At the time of transurethral resection, there were many large veins coursing over the urethra and serving as the source of the hematuria. Benign prostatic hypertrophy, with its associated vascular engorgement, is a frequent cause of hematuria, whereas carcinoma of the prostate is an infrequent offender because of its origin in the posterior lamella.

Case 6. An 80-year-old man entered the hospital with a bloody urethral discharge and dysuria which had been present for about four months. He had had gonorrhea as a youth, and once had undergone urethral dilatation for stricture. Urinalysis showed many white blood cells and red blood cells per high-power field. On physical examination, a firm, nontender mass was palpable 4 cm. proximal to the urethral meatus. Urethrograms showed an irregular filling defect in the anterior urethra and a bulbous urethral stricture (Figure 6). This lesion was easily visualized at the time of panendoscopy. Partial penectomy was done for a transitional-cell carcinoma of the urethra (Figure 7).

Although this is an uncommon tumor, the classical symptomatology and physical findings, supported by endoscopic and roentgenographic visualization, established the diagnosis.

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Postmenopausal Bleeding: A Commonly Neglected Sign

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IN DEALING WITH fairly large numbers of cancer patients at a cancer referral treatment center, it is not uncommon for one to find patients who, through fear or lack of education have denied themselves a possibility of cure by their own delay in seeking medical counsel. This fact serves to reemphasize the continuing need for health education.

Women with irregular bleeding form a segment of this group of patients. When queried, they may say, "It was such a small amount of bleeding that I was sure it couldn't be serious," or "I didn't have any pain when the bleeding occurred, so I knew it wasn't serious." Unfortunately, however, patients occasionally report, "My doctor took a cancer smear and said I had nothing to worry about," or "My doctor said I was bleeding because of the shots or pills I was taking." All too often, patients construe a physician's statements to mean what they, the patients, want to believe. Thus, these women may have found reassurance in their doctors' words, even when reassurance was not truly intended.

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LET'S NOT MISS ANY CASES OF ENDOMETRIAL CANCER

Irregular bleeding can be the earliest presenting sign in a number of gynecologic conditions. The most lethal of these are cervical carcinoma and carcinoma of the endometrium. The diagnostic evaluation of bleeding related to carcinoma of the cervix is straightforward and usually offers no problems, since the cervix can be seen and easily biopsied. The identification of endometrial carcinoma is more difficult. The average age at diagnosis of carcinoma of the endometrium is 57 years.[1] Seventy-five per cent of the women who have car-

cinoma of the endometrium are postmenopausal.[1] Minimal, irregular, painless vaginal bleeding is the presenting sign approximately 95 per cent of the time in patients with endometrial carcinoma.[3] All physicians are aware of these facts, and they are also aware that early diagnosis of cancer of the endometrium can lead to successful treatment.

It is certainly the general impression that we handle the problem of cancer of the endometrium quite well, probably because (1) cancer of the endometrium is encountered less frequently than is cancer of the cervix; (2) it seems to have a less lethal potential; (3) the average surgeon with no special training can carry out the treatment more successfully than he can render surgical treatment for carcinoma of the cervix; and (4) the literature reports cure rates ranging from 75 per cent[3] to 90 per cent[2] five-year survivals for patients with early endometrial carcinoma lesions.

This complacent attitude is thoroughly unjustified, since (1) cancer of the endometrium cannot be seen or felt; (2) the symptoms certainly are not pathognomonic; (3) office diagnostic aids such as the vaginal smear cannot be relied upon to rule out the diagnosis of carcinoma of the endometrium; (4) its incidence is increasing; and (5) once it has become invasive, it is just as lethal a disease as is carcinoma of the cervix.

A conclusion can be drawn from a careful scrutiny of the literature—that carcinoma of the endometrium is not so favorable a type of cancer as physicians would like to think it. The over-all five-year survival for all cases at the State University of Iowa Hospitals is 55.2 per cent.[3] Only 37 per cent of all patients with endometrial carcinoma fall into the ideal treatment group, and this figure compares favorably with those in other reports. The five-year survival rate for this group of patients is 75.77 per cent.[3] For the more unfavorable lesions, the five-year survival rate is much lower.

What of the 63 per cent of patients who cannot have ideal treatment? Most of these women have advanced disease. True, some of them fall outside the ideal treatment group because of associated medical problems such as heart disease, obesity and diabetes mellitus. If we momentarily review the point that until it becomes invasive, carcinoma of the endometrium is a slow-growing lesion, it should be evident that with greater diagnostic suspicion and a more vigorous diagnostic approach, we could identify these patients before they develop advanced lesions.

TEMPTATIONS TO BE AVOIDED

We need a reliable diagnostic test for endometrial carcinoma that we can perform in our offices. Some of the technics that we can use are the endometrial brush, the suction biopsy curette, and the Papanicolaou smear of endometrial washings, but as yet these devices are not satisfactory in ruling out carcinoma, and a fractional dilatation and curettage must be resorted to.

There are some common temptations to which we must not succumb. First, we must not rely on the Papanicolaou smear to rule out the diagnosis of carcinoma of the endometrium. At the State University of Iowa Hospitals, there is no more than approximately a 75 per cent correlation between carcinoma of the endometrium and a positive Papanicolaou smear. Therefore, a negative Papanicolaou smear cannot rule out cancer at this site. Second, we must be wary of the temptation to explain postmenopausal bleeding as bleeding associated with exogenous estrogen therapy. If there is any abnormal bleeding in a patient who has been on estrogen therapy, the physician must assume responsibility for ruling out malignancy.

SUMMARY

If we recognize that 50 per cent of the women who have postmenopausal bleeding will have a diagnosis of carcinoma of the female genital tract,[4] it behooves us to use the most adequate diagnostic methods for detecting this carcinoma. The old medical school axiom "Postmenopausal bleeding represents cancer until proved otherwise" remains a good one. The evaluation of postmenopausal bleeding is not complete until a diagnostic fractional dilatation and curettage has been carried out.

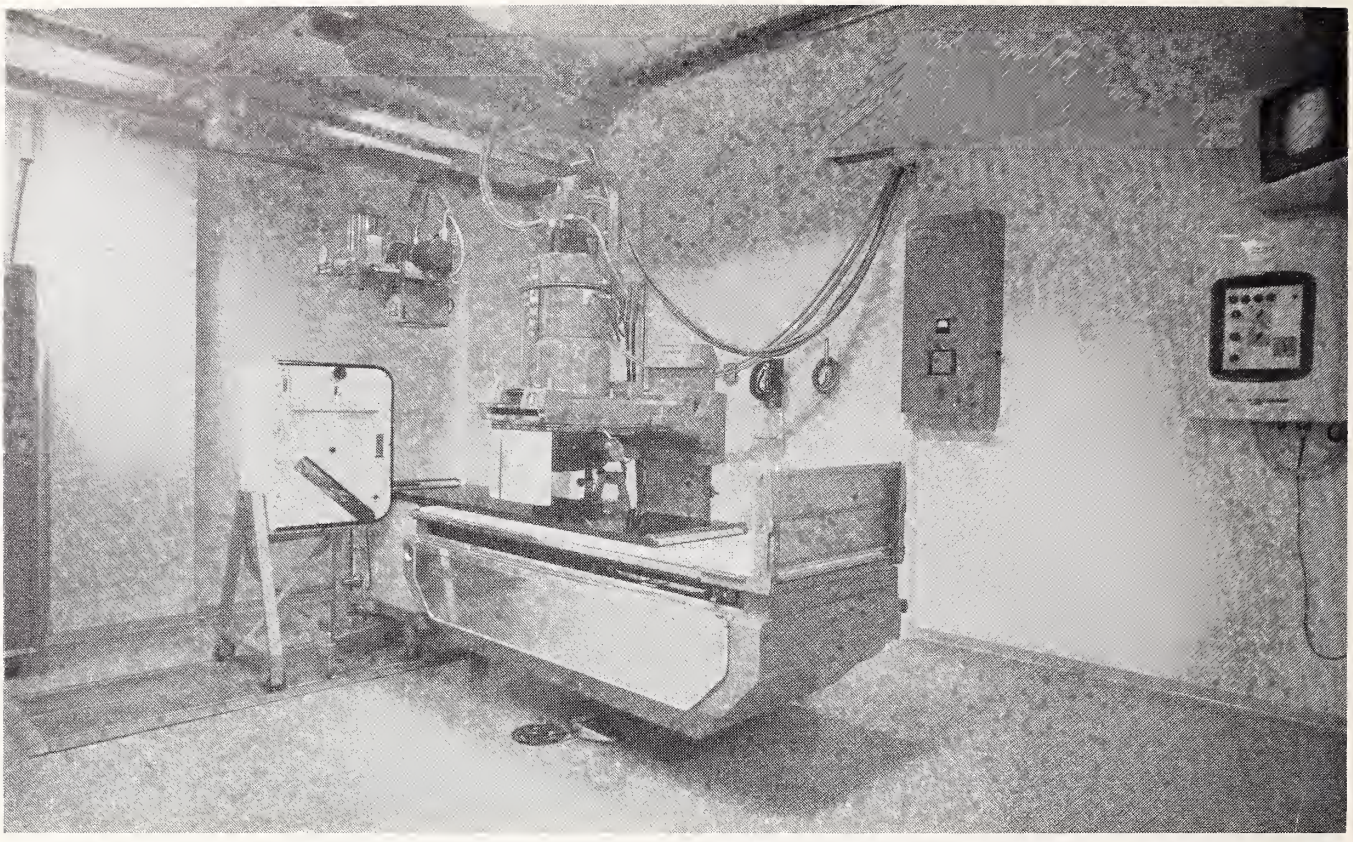
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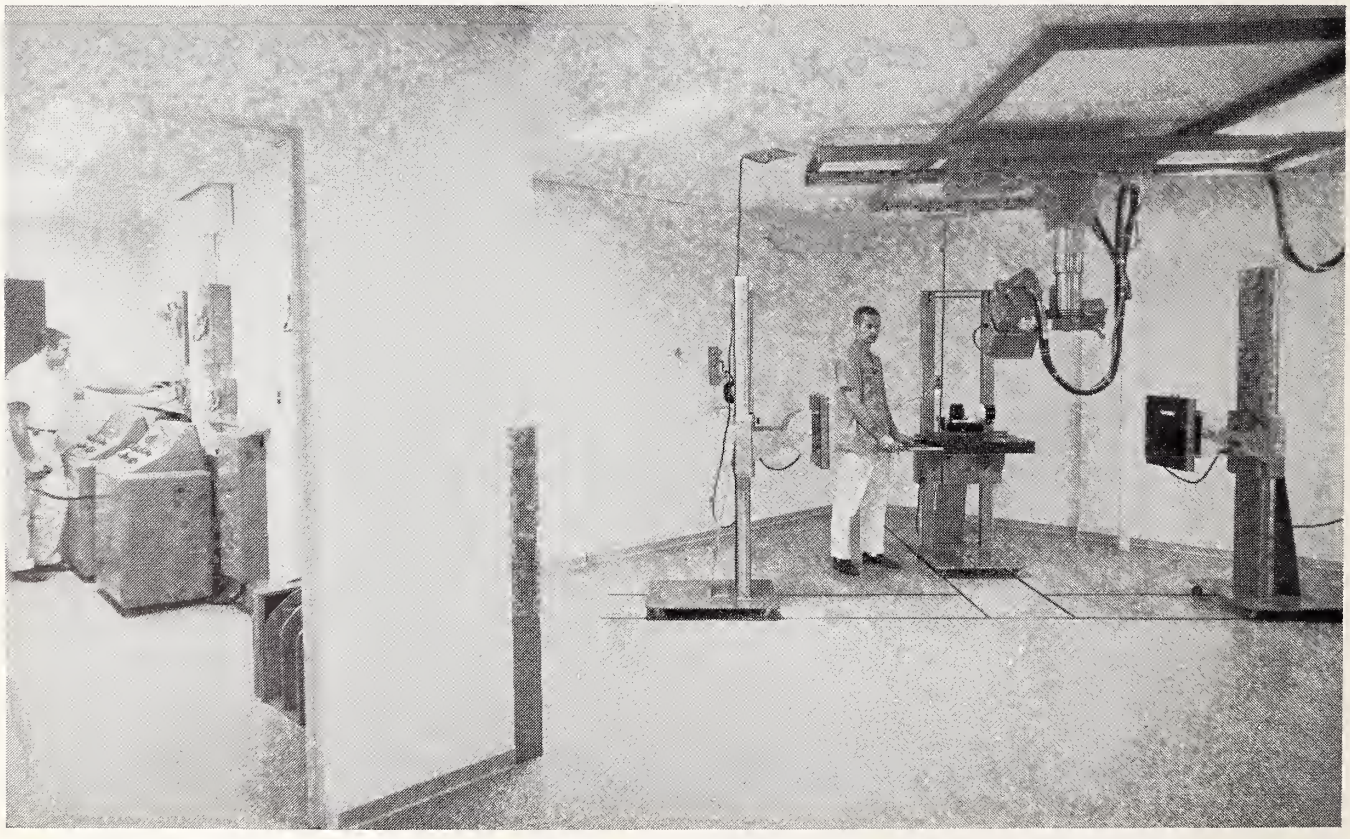
EKG by Telephone

One of the attractions at the IMS Annual Meeting, April 27 and 28 will be the transmission of EKG data over regular telephone lines. Actual patient EKG tests will be transmitted from the Iowa Methodist Hospital in Des Moines to the convention exhibit area at Hotel Fort Des Moines.

A closed circuit telecast will permit doctors to see the actual EKG being performed at the hospital, and at the same time to watch the reception of the electrocardiograph in the exhibit area. Direct telephone service between the hospital and the exhibit will also permit doctors to question the EKG technician.



This new cardiovascular room, located on the sixth floor of SUI's General Hospital, is operated by the Department of Radiology's Division of Diagnostic Radiology. Image intensification is achieved through the use of a new three-inch output phosphor tube. A movie camera operating at speeds of 7½ to 60 frames per second is placed on top of the tube. Two television monitors are used for viewing. The bi-plane Elema-Schonander unit utilizes two separate tubes and can take films in two planes at right angles to each other up to six films per second. Each film cassette holds thirty 14" by 14" films. All of this equipment is powered by two three-phase 700 MA Siemens' generators found in the room directly above this one. With this equipment, any part of the vascular tree can be visualized in either large or selective areas, after catheters have been inserted into arteries and/or veins.



Staff technician James Seaba operates the control for the cardiovascular room while James J. Connors, instructor in radiology, stands by the new neuroradiological unit at right. The unit includes an overhead tube and an AP stand, and has provisions for taking each lateral projection without moving the patient's head. It is used for pneumo-encephalograms, ventriculograms, and cerebral angiograms. Dr. E. F. Van Epps, head of radiology at SUI and a past-president of the Iowa Medical Society, says his department is now one of the best equipped in the country.



This new x-ray unit, located in the remodeled first-floor surgical outpatient area, is used for night emergencies and routine day work. Second year student technician Diane Sauer and staff member Mike Callahan are demonstrating the main unit, which includes a Picker tubestand, fluoroscope and table. At left are the controls for a 700 MA Siemens' generator. The room also contains an upright abdomen and chest x-ray film holder.



To the left is the corridor leading to the x-ray room in the surgical outpatient area and to the right is the film viewing and sorting area. Miss Sauer is removing negatives from a new M4A Kodak X-O-Mat, which can completely process film in seven minutes. Film is fed into the machine from a darkroom on the other side of the wall. The physicians at the rear of the area are using one of the four viewboxes. The pigeon holes at right are used for storing film by name.

The Clinical Significance of Weight Change

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After physiologic maturity has been attained, body weight remains remarkably stable, save for a gradual increase related undoubtedly to a progressively reduced basal caloric requirement and an increasingly sedentary way of life. The factors which control the generally excellent balance between intake and output of calories are largely unknown, but certainly hypothalamic control of food intake is one of them. If caloric intake were uncontrolled, all of us would undoubtedly be grotesquely obese, with the abundant food supply available to us and our increasing desire to ride instead of walk. The record of body weight is of considerable importance, and the clinical scale is one of the most practically useful tools with which to document the sequential changes in weight. Weight-loss documented thus, or contained in the patient's history, is often the harbinger of ill-health and disease, and in fact it may be one of the first clinical signs of illness, or the reason for the patient's visit to the physician.

All too often in our affluent society, the problem is one of excessive weight gain and obesity, instead of weight loss. It is frequently difficult to convince the patient, or even the physician, that excessive weight gain and obesity are fundamentally matters of improper caloric balance, with the ingestion of calories far exceeding the output and with these excess calories being deposited as fat in the adipose tissues. It is absolutely imperative, in any successful weight-reduction program, that both the patient and the physician recognize the basic cause of excessive weight gain, and the necessity for caloric restriction and increasing exercise until a proper balance between input and output of calories results in weight loss. It is not necessary to reiterate the well-known health hazards of obesity, but one cannot overemphasize the significance of either weight loss or weight gain in chronic and degenerative disease problems. This is the area in which our modern medical science has made very slow progress indeed.

FUNDAMENTALS OF WEIGHT LOSS

Weight loss may be mild or very great, and may vary in clinical significance from serious organic illness and pathology to minor and relatively insignificant problems. Weight loss is related to three fundamental factors which may operate independently or collectively. They are: (1) inadequate food or caloric intake, (2) improper digestion and absorption of ingested nutrients, or (3) abnormalities in the metabolism of the absorbed nutrients associated with blocks in the metabolic process, altered direction of the metabolic sequence, or excretion of nutrients before they can be utilized for synthetic or caloric purposes. Therefore in analyzing the problem of weight loss, one must investigate each of these three areas to determine its degree of contribution to the basic problem.

THE DIET HISTORY

The diet history is of extreme importance if one is to obtain a satisfactory answer to the question "Is the caloric and food intake adequate?" Unfortunately, the diet history is often the least satisfactory part of the patient's record. All too often it has been dismissed with the statement "The patient appears well-nourished and well-developed" and the comment that he eats either well or poorly, as the case may be. It certainly takes time to obtain a good dietary history, but very often this investment of time is most rewarding. Often the problem of inadequate food intake is related to nothing more serious than a temporary change in dietary habits due to psychologic trauma, poor dentition, or similar factors. On the other hand, poor appetite with associated weight loss may be indicative of some much more serious organic illness. Of these, malignancy is of the greatest concern.

WEIGHT LOSS IN MALIGNANCY

Often one of the earliest signs of malignancy is the development of weight loss and an accompanying and unexplained poor appetite. Food seems to lose its "taste," and the individual complains that hunger and a desire for food are lacking. It is of interest that the exact mechanism for the impairment of appetite in association with malignancy remains largely unexplained. Malignancy affecting the gastrointestinal tract is nearly always associated with impaired appetite and associated weight loss. This is all the more important because of the relatively high incidence of malignancies affecting the gastrointestinal tract. In gastric carcinoma, the most common presenting complaint is weight loss with epigastric pain, indigestion, weakness, anorexia and vomiting. Pa-

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tients with carcinoma of the large bowel may have experienced changes in bowel habits, the passage of blood and mucus per rectum, weight loss, cramping abdominal pain with tenesmus, and vomiting and weakness in varying degrees.

Compounding the problem of weight loss in malignancy, in association with anorexia and poor food intake, is the metabolic diversion of absorbed nutrients to the growing malignant tissue. This may partially account for both the weight loss and for the acceleration of muscular wasting so often found in malignancy.

Unfortunately, an unexplained weight loss, though suggesting the possibility of cancer, may often result in failure to identify the primary site of the malignancy, despite an exhaustive search. This should not minimize the need for a persistent and continued search for malignancy. Careful observation over a period of time is well worthwhile.

A rather uncommon but interesting cause of weight loss in association with malignancy is the malignant carcinoid. Here the patient may present with abdominal discomfort, recurrent diarrhea, nausea and vomiting, hyperperistalsis and progressive loss of weight. In this disease the carcinoid tissue induces a metabolic defect. There is an increased diversion of the amino acid tryptophan to serotonin, leaving less of this essential amino acid for the formation of the vitamin niacin and, of course, protein. Because of this metabolic abnormality, one occasionally sees evidence of protein deficiency and even the signs of pellagra. A careful evaluation of the urine for evidence of increased excretion of 5-hydroxyindolacetic acid may lead to the diagnosis. In malignant carcinoid the excretion of 5-HIAA is greatly elevated, usually to the level of 50-600 milligrams per day, in contrast to the 2-10 milligrams per day in a normal subject.

WEIGHT LOSS DUE TO MALABSORPTION

Diarrhea from any cause may significantly increase losses of all ingested nutrients and hence lead to weight loss. Nutritionally speaking, nutrient wastage therefore is the cardinal feature of the malabsorption syndrome, whatever the cause. The features of the malabsorption syndrome are weight loss, anorexia, abdominal distention, muscular wasting, and abnormal stools usually light yellow to grey in color, greasy and soft. The causes of malabsorption syndrome are numerous. Some of the more common are related to an inadequate digestion secondary to stomach resection, biliary obstruction, biliary cirrhosis or pancreatic insufficiency. Biochemical abnormalities associated with celiac disease of adult life and childhood, tropical and nontropical sprue, and a deficiency of the sugar-splitting enzymes—all of these lead to malabsorption and wasting of nutrients, and are accompanied by weight loss of serious proportions. In any disease associated with the malabsorption syndrome, a careful dietary history should be taken in an effort to discern any possible dietary factors which may be contributory to the malabsorption. Gluten sensitivity is of course the most common of dietary offenders. Though often accused, food allergies *per se,* aside from gluten, are seldom confirmed as significant causes of the malabsorption syndrome. This is particularly true in the adult.

Of the diarrheal diseases, ulcerative colitis looms large as a factor contributing to significant and severe weight loss. Often this disease is ushered in by mild, vague symptoms and only a very gradual weight loss, but the onset may be fulminating and abrupt, with fever, bloody diarrhea, marked anorexia and weight loss.

METABOLIC FACTORS AND WEIGHT LOSS

Not only must nutrients be ingested in the proper kinds and amounts, and absorbed and digested, but after absorption they must be catabolized to provide energy, produce growth, and maintain and repair tissues. Therefore, any factor which disturbs normal metabolism may lead to the improper utilization or wastage of nutrients at the metabolic level, and thus result in a significant weight loss.

THYROTOXICOSIS

Extreme fatigue, with significant and progressive weight loss despite a good to excellent food intake, is strongly suggestive of increased metabolism and thyrotoxicosis. The greatly accelerated metabolism in this disease simply exhausts the exogenous supply of nutrients, accelerating the breakdown of the body's tissues, with resultant wasting and fatigue. Fortunately this is a readily treatable disease, when properly diagnosed, and a complete remission of the signs and symptoms follows successful therapy.

DIABETES MELLITUS

Polyuria, polydipsia and polyphagia are still the cardinal features in the onset of diabetes mellitus. Despite a substantial ingestion of nutrients, there is a significant loss of weight and strength unless the disease is treated. Obviously, a significant loss of glucose in the urine not only robs calories from the patient, but even more important, disrupts his metabolic balance through a gross overemphasis on fat metabolism. Again, diagnosis and treatment are relatively simple if this disease is thought of in connection with the presenting symptoms and complaints.

CHRONIC ADRENOCORTICAL INSUFFICIENCY

Anorexia, nausea and vomiting are among the important gastrointestinal complaints associated with the weight loss in adrenal failure. The first evidence of adrenal failure may be associated with the development of a crisis brought on by an acute infection, trauma or a surgical procedure. Hypoglycemia may occur following high carbohydrate

loads or during prolonged periods of fasting. The most definitive diagnostic sign is the failure of adrenocortical hormone response following the administration of pituitary corticotrophin (ACTH). The administration of hydrocortisone leads to a rapid restoration of appetite, and increases the patient's sense of well-being, muscular strength and body weight. The tendency toward hypoglycemia is markedly reduced.

ALCOHOLISM, WITH CIRRHOSIS

The progressive development of cirrhotic changes in the liver, with fibrosis and gross distortion of the hepatic parenchyma, following the prolonged ingestion of alcohol, particularly in association with poor dietary intake, leads to progressive weight loss and significant muscular wastage. Here, the problem of weight loss may be camouflaged by the development of ascites and fluid accumulation. The impaired capacity to metabolize protein, in the patient with a seriously decompensated liver, adds to the hazards of this disease and often results in the development of hepatic coma. Therefore, in the treatment of cirrhosis it is essential to determine the patient's ability to metabolize protein before high protein intakes are imposed. Protein, though essential to the restoration of normal hepatic parenchyma, is not well-tolerated by the seriously decompensated cirrhotic liver. An abundant supply of non-protein calories will aid further in minimizing protein catabolism.

ANOREXIA NERVOSA

This is indeed a rare disease, and whether metabolic or psychologic in character, it results in severe weight loss and extensive muscular wasting. From the psychologic point of view, it is interesting to note three characteristic denials by the patient who has this disease: (1) a denial of hunger, (2) a denial of actual weight loss, and (3) a denial of muscle wasting and extreme thinness. Perhaps in these denials lies the psychological basis for this disease.

RHEUMATOID ARTHRITIS

Since the etiology of rheumatoid arthritis is unknown, it is not unreasonable to list it as a metabolic disease. It is interesting that in this condition there are two problems of weight control. In the prodromal phase so commonly seen, there are fatigue, weakness and significant weight loss. In addition, there may be vasomotor disturbances with numbness and tingling of the hands and feet. A commonly observed but very little understood facet of this disease is the marked muscular wasting associated with joint involvements. This is particularly often noted in the hands and forearms. It is not entirely clear whether this muscular wasting is simply secondary to disuse of the joint, or whether a more basic metabolic factor is involved.

On the other side of the coin, excessive weight gain and obesity often plague the patient with fully developed rheumatoid arthritis. These are particularly serious in a patient who has already been made vulnerable by significantly reduced joint strength and mobility. It would appear that the vicious cycle of joint inactivity and continued normal or increased caloric intake, with a resultant obesity, compounds the difficulties by making the joints support more weight and inflict increased pain. The consequence is an even more sedentary way of life and further obesity. Attempts to reduce weight in the obese rheumatoid arthritic, of course, are made much more difficult by the restriction of movement imposed by the disease.

WEIGHT LOSS IN INFECTIOUS DISEASE

Weight loss in association with tuberculosis is a classical example of the effects of infection and febrile illness on metabolism and food intake. In any febrile illness, it is a reasonable working assumption that the basal metabolic rate increases approximately 7 per cent for each degree Fahrenheit in excess of 98.6 degrees. The effect of the consequent increase in metabolic rate is exaggerated, for individuals with febrile illnesses, particularly those who may have toxic symptoms, have a very limited desire for food and hence a markedly reduced food intake. Under these circumstances, it is not unusual for a rapid and extensive weight loss to occur, particularly if fever is prolonged. With the advent of antibiotic control of infectious disease, prolonged fever is not so serious a problem as it once was. It is still important, however, to emphasize the increased nutritional needs associated with febrile illness.

METABOLIC EFFECTS OF CONGESTIVE HEART FAILURE

Patients with chronic congestive heart failure suffer a gradual but progressive loss of muscle tissue which is often obscured by the accumulation of edema fluid. If, because of inadequate contractility, the heart fails to pump enough blood to nourish the tissues adequately, a progressive wasting of these tissues results. This has a general effect on the metabolism of the tissues. Then too, in association with the development of indigestion, epigastric distress and even nausea and vomiting occur. Respiratory difficulties and shortness of breath can significantly add to the difficulty of eating, and one of the most common complaints of such individuals is "I just can't breathe well enough to eat." This complaint, of course, is also heard from individuals with seriously impaired pulmonary function and associated shortness of breath.

THE PROBLEM OF WEIGHT GAIN

In the patient who is gaining weight, it is important to establish whether or not the weight gain represents increased deposition of fat in the adipose reserves, or whether it represents the accumulation of edema fluid or a combination of these factors. Severe cirrhosis, the nephrotic syndrome or chronic congestive heart failure may be associated with a serious accumulation of edema fluid, ascites or fluid in the chest, leading to great gains in body weight. This weight gain does not represent deposited fat, of course, and the use of proper diuretic agents and a successful diuresis can rapidly eliminate these accumulations of weight.

SUMMARY

In the adult, stability of body weight is important, and significant deviations from normal represented by either excessive weight loss or excessive weight gain may have great clinical significance. Weight loss is inevitably related to any one or a combination of the following factors: (1) inadequate caloric intake, (2) improper digestion and absorption of the ingested nutrients, or (3) abnormalities in metabolism which divert nutrients improperly or waste them in the excretions. A good dietary history and a clear understanding of the nutritional and biochemical principles underlying the ingestion, absorption and utilization of nutrients will lead to a better understanding of the disease process.

State University of Iowa
College of Medicine

Clinical Pathologic Conference

CLINICAL SUMMARY

A 54-YEAR-OLD WHITE MALE baker was admitted to the University Hospitals with dropsy of one year's duration. In the six months prior to admission, he had experienced exertional dyspnea of increasing severity so that he could work only half-time, and eventually could walk only with difficulty from the front to the rear of his house. Early in this period he had noted paroxysmal nocturnal dyspnea and orthopnea. Later he had experienced the accumulation of pedal edema and variations in his girth, despite treatment which included 0.1 mg. digitoxin daily, and chlorothiazide 500 mg., b.i.d. with potassium supplementation and diuretic injections three times weekly. A mild cough productive of small amounts of yellow sputum had recently been present, but no hemoptysis. At no time did he have symptoms suggesting myocardial infarction, angina, rheumatic heart disease or congenital heart disease. He had smoked one pack of cigarettes daily for many years. For 1½ years he had noted a decrease in sensation in his legs and tremulousness of his hands during purposeful movements. His appetite had been poor for six months.

His diabetes mellitus had been present for 25 years, but it was controlled satisfactorily with NPH insulin, 10 units daily. There had been no episodes of ketoacidosis. He was usually aglycosuric, and insulin reactions were not common. He had been hospitalized at the ages of 30, 36, and 49 years, for regulation of his diabetes.

On the morning of the day of admission, while driving his car to Iowa City, he had had a "blackout," during which his car had collided with a railroad signal pole. His right knee had struck the dashboard, and his chest the steering wheel. He had aroused spontaneously from the spell without taking carbohydrate. He had then been seen at a nearby hospital, where roentgenograms of the knee and chest had been taken and reported as normal. He had been permitted to proceed to Iowa City, where he had arrived without further difficulty.

On admission to the hospital he appeared well-nourished and well-developed, alert and cooperative. He had some difficulty with remote recall. He was comfortable at rest, but was dyspneic when walking. He limped, and favored the right leg. The blood pressure was 130/70 mm. of mercury, and the pulse rate was 76/min. The oral temperature was 99.2° F. The body weight was 167 pounds. The pupils of the eyes were normal. Funduscopic examination revealed microaneurysms, punctate hemorrhages and waxy exudates in both retinae. The third division of the right superior temporal venule was obliterated. Vitreous opacities were noted in both eyes. Jugular vein distention was absent.

Dullness and diminished breath sounds were

noted at the bases of both lungs. Scattered rales were heard in both lower lung fields. The heart was thought to be slightly enlarged to the left, but the borders were indistinct. The point of maximal impulse was diffuse. The tones were distant, the rhythm was regular, and no murmurs were heard. The abdomen was obese and generally tender to palpation. No enlarged organs were felt, and the bowel sounds were normal. No fluid wave was demonstrated.

There was 4+ pitting edema below the knees, and 1+ of the thighs. Active movement of the right knee was restricted by pain. Palpation of the right knee medially and over the patella elicited tenderness. The peripheral pulses were of good quality. Tendon jerks were absent at the knees and ankles. An intention tremor was present.

The blood hemoglobin level was 11 Gm./100 ml. The white blood cell count was 11,200/cu. mm., and the differential smear showed 72 per cent neutrophils and 28 per cent lymphocytes. Urinalysis showed a specific gravity of 1.015, a pH of 6, 2+ proteinuria, and an occasional white cell on microscopic examination. Venous pressure was 180 mm. Hg., and the circulation time was 23 seconds from arm to tongue. A roentgenogram of the chest revealed cardiomegaly, congestive failure, and evidence of right lower lobe pneumonia. Roentgenograms of the right knee revealed no abnormality. Mild calcifications of femoral and popliteal arteries were noted.

On the second hospital day, an electrocardiogram showed a complete left bundle branch block. Blood chemistries displayed a blood urea nitrogen of 24 and a creatinine of 1.8 mg. per cent, and the CO_2 was 19.3, the sodium 140, the potassium 5.9, and the chloride 112 mEq./L. The AM blood sugar was 66 and the PM 85 mg. per cent. The hemoglobin level was 9.7 Gm./100 ml., and white blood cell count was 8,400/cu. mm., with 84 per cent neutrophils, 1 per cent eosinophils, 9 per cent lymphocytes, and 6 per cent monocytes. The hematocrit was 32 per cent. The serum albumin was 3.5 and the globulin 3.2 Gm./100 ml. The cholesterol was 252 mg. per cent. VDRL and Kolmer tests were nonreactive.

After admission, the patient was kept in bed. He was given a 2,000 calorie diabetic diet, mercuhydrin, 2 ml. intramuscularly, and aminophylline, 250 mg. intravenously. He was given digitoxin, 0.1 mg., chlorothiazide, 1 Gm., triple solution of potassium, 15 cc., and NPH insulin, 10 units daily. By the third hospital day he had lost eight pounds. Because of an insulin reaction at 3:00 a.m., insulin was discontinued on the second hospital day. He also had no sugar in his urine and the postprandial blood sugars were normal. Tolbutamide (Orinase), 500 mg. b.i.d., was started the third hospital day, and he was allowed up in a chair three times daily. On the fourth hospital day a venous blood sugar was 373 mg./100 ml. His oral temperature never exceeded 100.4° F., and his pulse rate ranged from 80 to 90 beats per minute.

At 8:40 a.m. on his fifth hospital day, he was found at the foot of the bed, doubled over, moaning, pale, and sweating. He was seen within five minutes by a ward physician. He suddenly became very cyanotic, frothed at the mouth and was pulseless. Attempts at cardiac resuscitation were of no avail.

CLINICAL DISCUSSION

Dr. R. F. Sheets, Internal Medicine: Mr. Jackson will discuss the protocol for the students.

Mr. C. Jackson, junior ward clerk: The history is that of congestive heart failure. The symptoms include dyspnea on exertion, resulting from pulmonary engorgement and edema, secondary to a failing myocardium. He had associated sodium and fluid retention of congestive heart failure with orthopnea and paroxysmal nocturnal dyspnea, probably due to redistribution of dependent fluid. He had edema secondary to sodium retention by the kidneys, and a cough, with sputum, secondary to pulmonary congestion and edema and/or cigarette smoking.

We suspect that the intention tremor was from cerebrovascular disease. The diminished sensation was probably from neuropathy, secondary to diabetes mellitus. His blackout was probably an example of atrioventricular block syndrome, or it could have resulted from focal cerebral ischemia. We tended to rule out a hypoglycemic episode because of the sudden onset. The patient would probably have been aware of prodromal symptoms and would have taken steps to alleviate the hypoglycemic episode by some means such as pulling off the road and eating a candy bar. Apparently he sustained only minor injuries in the auto mishap.

Physical examination suggested widespread atherosclerosis, with cerebrovascular disease and congestive heart failure, diabetes mellitus with neuropathy and early pneumonitis. We didn't think that the heart failure was secondary to congenital, rheumatic, or hypertensive heart disease. There were no physical signs of constrictive pericarditis. We couldn't definitely eliminate rarer causes such as diffuse ideopathic myocarditis and beri-beri heart disease.

Because there was no history of angina or myocardial infarction, ischemic heart disease was the diagnosis by exclusion, and we thought that the process was probably accelerated by long-standing diabetes mellitus. Laboratory findings were consistent with these impressions, and revealed an intercapillary glomerulosclerosis to explain the proteinuria. Left ventricular hypertrophy or an old myocardial infarction would explain the electrocardiographic findings of complete left bundle branch block.

The cause of death was probably cardiac arrythmia, resulting from acute myocardial infarction.

Pulmonary embolus is a distinct possibility. Less likely causes would have been massive exsanguination from an aortic rupture or a retrograde dissection or cardiac ball-valve thrombus.

In summary, our clinical diagnoses are cardiac disease with an etiology of atherosclerosis accelerated by diabetes mellitus. Anatomy: coronary artery atherosclerosis with myocardial fibrosis. Physiology: congestive heart failure with pulmonary edema, function: Class III. Other diagnoses: diabetes mellitus with complications of neuropathy, retinopathy, and nephropathy. The pathologist will probably demonstrate widespread atherosclerosis, liver engorgement with minimal fibrosis, pancreatic and kidney findings consistent with long-standing diabetes mellitus, pneumonitis and possibly a large embolus or emboli in the lung, cardiomegaly with coronary artery atherosclerosis, small focal areas of myocardial fibrosis, and possibly an old and/or a recent myocardial infarct. The acute myocardial infarct postulated as a possible mechanism of death would not be demonstrable at this time.

Dr. Sheets: Mr. Jackson, I don't think you can conclude that the patient would have known that he was going to have a hypoglycemic episode. Some people, particularly those who have had diabetes for a long time, just don't know when they're going to have a hypoglycemic episode.

Dr. Stone, will you discuss the protocol?

Dr. D. B. Stone, Internal Medicine: I think that two problems confront us in this case. The first is the nature of this 54-year-old man's chronic illnesses, and the second is the cause of his death. I shall discuss these separately, for it it always a mistake to ascribe a new development to a chronic illness without taking a fresh look at the whole situation.

What chronic diseases did this man have? First, we know that he had had diabetes mellitus since the age of 29. He seems to have had the typical sort of diabetes which starts in adult life, and it is surprising only that he had had to be admitted to a hospital three times in order to arrange his diet and insulin. Next, he seems to have developed some of the complications which often occur after a person has had diabetes for 25 years. I think he had diabetic retinopathy, for all the changes described are typical of that kind of retinopathy, and there was no evidence of other diseases which cause retinal damage.

Also, I think he probably had diabetic nephropathy. Two-plus proteinuria is not, of course, a quantitative estimation, but the proteinuria of heart failure is usually slight in amount, and it seems reasonable to suspect that 25 years of diabetes had damaged his kidneys. By diabetic nephropathy I mean glomerulosclerosis—both diffuse and nodular—and nephrosclerosis. The urine contained only a few white cells, but I should not be surprised if the pathologist also found evidence of old pyelonephritis.

I think he also had diabetic neuropathy. The absent reflexes indicate a lower motor neuron lesion. Intention tremor usually means cerebellar damage, but sometimes it indicates damage to the inflow or outflow tracts of the cerebellum, and very rarely peripheral neuropathy. Personally I have not seen intention tremor in diabetic neuropathy, but there was no evidence of any other neurologic disease, and I concluded that diabetic neuropathy was the cause of the neurologic signs.

I think this man also had congestive cardiac failure. Both cardiac and lung disease cause breathlessness, but several things made me think this man's dyspnea was cardiac in origin. Orthopnea is common in heart disease. It may occur at night in people who have little breathlessness during the day, but it is uncommon in primary lung disease. It is sometimes difficult to distinguish between paroxysmal cardiac dyspnea and bronchial asthma, and of course the two may co-exist, but the absence of wheezing and the presence of other features which suggest heart disease led me to exclude bronchial asthma. Moreover, he had the progressive clinical course which is quite characteristic of congestive heart failure.

The diagnosis was confirmed by the prolonged circulation time and the elevated venous pressure. Nothing suggests that he had the other disorders which prolong the circulation time: polycythemia vera or myxedema; and nothing suggests that he had another cause for the raised venous pressure: constrictive pericarditis; pericardial effusion with cardiac tamponade; thrombosis of the venae cavae; mediastinal tumor or aortic aneurysm; or obstructive emphysema and asthma with increased intrapleural pressure.

What was the underlying cause of the heart failure? I shall ascribe it to coronary heart disease, though this is always a hazardous diagnosis in the absence of angina. The left bundle branch block and the background of chronic diabetes are certainly in keeping with ischemic heart disease. Moreover, this man did not have hypertension or valvular disease, and there is nothing to suggest any of the rarer causes of heart failure. The heart failure of hemochromatosis can be excluded because he lived too long. Few people with hemochromatosis live more than 10 years after developing diabetes.

It is often difficult to find the precipitating cause of congestive heart failure, but my guess is that this man had a painless myocardial infarction before his heart failure started, more than six months before his death. Several investigators have described painless myocardial infarction, and its frequency has been from about 5 to 25 per cent in different reports. He may well have had many small areas of infarction, rather than one big one.

I could find nothing to suggest any other chronic

diseases, and I concluded that when he came to the University Hospitals, this man had diabetes mellitus, diabetic retinopathy, neuropathy and nephropathy, and congestive heart failure, the underlying cause of which was coronary heart disease.

After reaching these conclusions, I searched for clues as to the cause of death. The protocol has many bits of negative evidence, and one positive clue which I think is important, for it seems to me that one positive clue is worth half a dozen negative ones. First, I wondered whether he might have died from one of his chronic illnesses. Could death have been caused by diabetes or its treatment? He did not die of diabetic acidosis. Nothing suggests hypoglycemia. He died about 1½ hours after breakfast and 12 or 14 hours after his penultimate dose of tolbutamide, and thus hypoglycemia is so unlikely a possibility that I have discarded it.

Could his death have been caused by diabetic nephropathy? The laboratory investigations refute the possibility of renal failure.

Could his death have been caused by his heart disease? Several investigators have reported the common causes of death in patients with heart failure. They include progressive heart failure, myocardial infarction, bronchopneumonia and pulmonary embolism. I think this man did not die simply of progressive heart failure, for he had improved by the third hospital day, by which time he had lost eight pounds in weight. Could he have died from coronary artery disease or from a fresh myocardial infarction? His blackout while driving to Iowa City may have been caused by a painless coronary occlusion, for people who have painless occlusion tend to have syncope or weakness instead of pain, or perhaps these symptoms overshadow mild pain.

Thinking of the myocardial infarction, I should now like Dr. Warkentin to review the electrocardiogram and, in particular, to tell us how to diagnose myocardial infarction in the presence of left bundle branch block.

Dr. D. Warkentin, Internal Medicine: Our one electrocardiogram on this patient shows the standard leads with a regular sinus rhythm and normally-occurring P-waves. There is an abnormal left axis deviation, in that the mean forces of the QRS complex are pointed at a minus 30°, and I'll speak about this a little bit later. The QRS complex is prolonged to 0.12 seconds, which is abnormal in itself. There is a biphasic T-wave in lead 1, and an inverted T-wave in lead AVL. The next slide shows the precordial leads. There are a small "r" and a broad S over the right precordial leads, and on the left there's a broad, slurred QRS complex in V5 and V6, with inverted T-waves in V5 and V6.

The inscription of the normal QRS complex depends, of course, upon the functional and anatomical integrity of the conducting system. There are many conditions that can change the sequence of depolarization of the ventricle. Among them are myocardial infarction, the bundle branch blocks, drugs such as quinidine and Pronestyl, and electrolyte disturbances, notably hyperkalemia. Myocardial infarction, in particular, interferes with the initial forces of depolarization, thus giving rise to diagnostic Q-waves in the appropriate leads. In the presence of left bundle branch block, there is an abnormal entrance of the excitation wave into the left ventricle, and therefore the left ventricle must be depolarized in an abnormal fashion and in an abnormal direction. Because this occurs so high in the left ventricle, along the left ventricular septum, it masks any deformity of the QRS complex which might be present distally. Therefore it is impossible to diagnose an old myocardial infarction in the presence of left bundle branch block.

Now, there is one exception—if there's a massive infarction of the interventricular septum. The initial electrical forces in such a case will sometimes give diagnostic Q-waves in leads 1, AVL, V5, and V6. This was obviously not the case in this electrocardiogram.

The abnormal depolarization in left bundle branch block also gives rise to abnormal repolarization, as can be noted by the abnormal T-waves in the electrocardiogram. Occasionally, with an acute myocardial infarction superimposed upon left bundle branch block, there are serial changes in the ST segment and the T-waves which can be followed over a period of days. If this occurs, some confidence can be placed in the diagnosis of acute infarction in the face of left bundle branch block. Again, it is impossible to make this diagnosis on the basis of just one electrocardiogram.

Finally, let me say a little about the left axis deviation. Left bundle branch block, *per se,* does not cause abnormal left axis deviation. The common causes for this deviation are myocardial infarction, chronic coronary artery disease, left ventricular hypertrophy, and occasionally pulmonary emphysema. I think it's reasonable to assume that this patient had an abnormal electrocardiogram before he developed his left bundle branch block, though the exact reason for this abnormality is unclear at this time.

Dr. Stone: There were some discordant notes which led me to exclude the possibility that this patient had a myocardial infarction five days before death. One was the absence of leukocytosis or fever. Another was that myocardial infarction tends to increase insulin requirements, whereas this man's diabetic control remained good during his first four days in the hospital. Moreover, his cardiac status seemed to improve during those first four days, and if I am correct in ascribing his earlier congestive failure to coronary heart disease, it would surprise me if he improved after a fresh infarction. I cannot exclude the possibility that he may have had a coronary occlusion on the morning that he died.

Did he die of bronchopneumonia? The roentgenogram is said to have revealed right lower lobe

pneumonia. At this time I should like Dr. Behlke to review the roentgenograms and to answer two questions. First, is it easy to distinguish between pneumonia and the signs of congestive cardiac failure, and second, is there any evidence of aortic aneurysm?

Dr. F. Behlke, Radiology: These are the initial chest films obtained in posterior, anterior, and left lateral projections. The heart looks enlarged, and the pulmonary vasculature appears engorged. A homogeneous density at the right base is localized posteriorly. The major fissure appears somewhat depressed in the lateral projection. I should interpret this situation as representing congestive heart failure, with a probable consolidated pneumonitis in the right lower lobe, probably with some loss in volume. The thoracic aorta does not appear particularly enlarged. There is some calcification within the aortic arch. If this man had a thoracic aneurysm of any size, I should think that we would see a much larger sweep or configuration in the PA projection, and although the lateral film demonstrates an obscuration due to the congestion, we still have the impression there is an aortic density here, and this does not appear enlarged in any descending portion. Thus I could not make a diagnosis of aneurysmal dilation of the thoracic aorta from these films.

Audience: Dr. Behlke, could that pulmonary lesion have resulted from an infarct as well as from pneumonia?

Dr. Behlke: Yes. The interpretation of the chest roentgenograms, of course, is readily influenced by the physical findings and the history, and the correlating of these findings is essential, I think, in getting the most out of a radiographic impression. If this gentleman had findings on physical examination and history that could represent pulmonary infarction or pulmonary embolism, I think that one would be obliged to say that this opacification which we see at the right lung base could very well have been due to a pulmonary embolism and infarction. On plain evaluation, there is no specific way that you can distinguish them. It's a matter of interpretation and correlation. The right hemidiaphragm, as you see here on the PA projection, is sharply demarcated, as is the left, and we could not make a diagnosis of pleural effusion on this basis because we do see a sharply-defined dome. I think that after you see a number of these, you get the impression immediately on seeing the films that there is cardiac decompensation with pulmonary edema as the vessels are engorged, and so forth.

Dr. Stone: Several things make me think that this man did not die of pneumonia. He had neither a leukocytosis nor a fever. Although pneumonia may occur without these findings in the elderly or in patients with overwhelmingly severe infection, this man was only 54 years of age and did not seem critically ill until a few minutes before he died. Also, I should have expected pneumonia to make his heart failure worse or to increase his insulin requirements, but actually his heart failure lessened and he remained in good diabetic control during his time in the hospital. Did he die of pulmonary embolism? This, like a terminal coronary occlusion, is clearly possible, and I cannot exclude it.

Since I found little to support the idea that this man died from one of his chronic illnesses, I searched for other clues. Could he have died as a result of the automobile accident on the morning of his admission? The blackout may well have been caused by hypoglycemia, for Balodimos and Root* have described insulin reactions that occurred without warning in patients with chronic diabetes. A number of our diabetic patients have had hypoglycemic episodes without warning—most of them being people who had had diabetes for years or had had diabetic neuropathy.

A steering wheel that hits the chest may damage the heart, the aorta or the upper abdominal organs —without external injury and without fracture of the ribs. Could the injury have damaged this man's heart? Experimental observation suggests that blunt injury is more likely to damage a diseased heart than a healthy one. The victim may die immediately afterwards, or one or two weeks later. But other than sudden death, this man had none of the wide variety of clinical manifestations which may follow such an injury, and his cardiac function seemed to improve during his first four days in the hospital. For these reasons, I don't think it likely that his death was due to cardiac injury. Non-penetrating chest wounds may also damage the aorta, most commonly the junction of the left subclavian artery and the descending aorta. I cannot exclude such a possibility in this man, but I can find nothing to support such an explanation.

Could he have injured his spleen or liver? Immediate rupture of the spleen usually causes signs which the careful observer does not miss, and I don't think this patient would have lived for four or five days with a ruptured, bleeding spleen. Delayed rupture of the spleen is not rare, and I cannot exclude it.

I also considered the possibility of injury to the liver, and here I think, there may be one positive clue. On the patient's admission to the hospital, an observer noted that the abdomen was generally tender to palpation, although no enlarged organs were felt and no fluid wave was demonstrated. Patients with congestive cardiac failure may have pain over an enlarged liver, they may have tenderness over an enlarged liver or they may have a slight generalized tenderness with ascites. But this man had neither a palpable liver nor ascites. I cannot recall seeing a patient with congestive cardiac failure without ascites who had generalized abdominal tenderness. The point is that generalized abdominal tenderness usually

* Balodimos, M. C. and Root, H. F.: Hypoglycemic insulin reactions without warning symptoms. J.A M.A. **171**:261-266, (Sept. 19) 1959.

means trouble, and I think that patients with this sign should be observed with the greatest care. Musselman and his colleagues* reported 18 patients with hepatic injury. Over half had received blunt, non-penetrating trauma. A minority had no pain, were not in shock when they entered the hospital, and had few localizing signs.

Is there any other evidence that might confirm or refute the possibility of liver damage? The patient's hemoglobin on admission was 11 Gm. One day later, it was 9.7 Gm., and the hematocrit 32 per cent. A hematocrit was not done on the first day, but I think that the diuresis which this man had would not have decreased the packed-cell volume. Generalized abdominal tenderness has many causes, of course, and includes such cardiovascular causes as mesenteric vascular occlusion and, uncommonly, aortic valve disease, pericarditis, myocardial infarction, and dissecting aneurysm. For various reasons I thought these were unlikely, and I suspect that this man probably died of injury to the liver.

In these exercises, it is always healthy to try to link all that happened, and for that reason I'll review what we know about the patient. This man had diabetes mellitus with retinopathy, neuropathy, and nephropathy. He had congestive cardiac failure, coronary artery disease, and an old myocardial infarction. While he was driving to Iowa City, he had a hypoglycemic episode, and as a result his car hit a signal pole, and the steering wheel hit his chest. I think that his liver was damaged in this accident, and that liver damage, with bleeding, was the cause of his death.

Dr. Sheets: Are there any questions?

Dr. S. E. Ziffren, Surgery: Are there any fractured ribs in the roentgenogram?

Dr. Behlke: No fractured ribs were reported when this was initially interpreted. I do not see any evidence of fractured ribs in these films. If fractured ribs are suspected, I think it behooves the clinician to request special views, because frequently in a plain chest study, one can readily overlook or fail to visualize a fracture.

Dr. Stone: It seems to me that the presence or absence of fractured ribs should not influence one's conclusion about injuries to the heart, the aorta, or the upper abdominal organs.

Student: Was the initial hemoglobin determination of 11 Gm. made by Central Lab., or by a student using a hemoglobinometer?

Dr. Sheets: It was first made with a Haden-Hauser hemoglobinometer in the hands of a student, and secondly by a technician from the Central Laboratory.

Dr. E. E. Mason, Surgery: I wonder whether the diabetes may not have been a red herring, and whether perhaps this whole thing can be tied together on the basis of venous thrombosis. The patient had a mild hyperchloremic acidosis, with a chloride of 112 and a CO_2 of 19.3 mEq./L., in the face of a normal BUN and a normal creatinine. So it may be that the patient had some renal disease, but not enough to make him uremic. Admittedly, diabetic nephropathy can lead to this sort of picture, but I think it is also found in patients with venous thrombosis. Patients with venous thrombosis of the kidney have proteinuria, which occurred in this patient. Also, the story is one of continued retention of fluid, in spite of what seems to have been quite a lot of diuretic treatment. Both oral and injection diuretics were used, and they just couldn't control the edema. This is also typical of a patient with venous thrombosis of the kidney. I suppose that if you want to tie the death into this, you could say that he had thromboembolic complications with venous thrombosis.

Dr. Sheets: Dr. Stone, I have a question for you. You postulated that this man had a hypoglycemic episode. Apparently he had been on 10 units of insulin for a long time. Some 25 years ago, as I recall, Dr. Gibson gave normal people increasing doses of insulin, beginning with small quantities, and was able eventually to give them quite large doses of insulin without producing hypoglycemia. As I recall, he increased the doses to 20-25 units a day. Do you think that a patient with diabetes would have hypoglycemia from the 10 units a day that he had been taking for a long time?

Dr. Stone: Yes, I do. But I think it's very unlikely, and I wonder whether his hypoglycemia might not have been caused, in part, by liver damage. People with congestive cardiac failure who wake up confused in the middle of the night sometimes have hypoglycemia, and it has been thought that this may be caused by liver damage. But diabetic patients rarely become hypoglycemic after small doses of insulin. The circumstances which surround so many patients when they drive to Iowa City may favor hypoglycemia, for many of them have arisen early in the morning, have taken unusual exercise, and have missed breakfast. This particular patient's syncope might not have been caused by hypoglycemia, but I shall stick to my guess, partly because I don't think anybody can demonstrate that I am wrong.

Dr. Sheets: Well, this has been a lively discussion. Dr. Givler, would you tell us what was found at autopsy.

Dr. R. Givler, Pathology: The most significant finding at autopsy was in the abdomen. On opening the abdomen, the prosector found an estimated liter of blood and blood clots within the peritoneal cavity. The source of the intraperitoneal bleeding was a hematoma of the liver measuring 15 by 3 cm. This cavity communicated with a larger subcapsular hematoma on the superior surface of the right lobe of the liver. There was a tear in the liver capsule. Both the gallbladder bile and the lumen of the duodenum were free of blood. From this finding, it would appear that there had been no bleeding into the biliary tree, at least at the time of autopsy. Judging from its microscopic ap-

* Musselman, M. M., Glas, W. W. and Grekin, T. D.: Management of abdominal injuries. NEBRASKA M. J. 41:112-120, (Apr.) 1956.

pearance, the hematoma in the liver was of recent origin, and its age would be consistent with the interval following the automobile accident.

Additional findings included some cardiac hypertrophy, coronary atherosclerosis, and an area of scarring in the myocardium of the posterior wall of the left ventricle. This scarring represented the residua of an old, healed myocardial infarct. No morphologic evidence of a recent infarct was demonstrated. There were bilateral pleural effusions and pitting edema of the lower extremities.

Grossly, the pancreas was quite atrophic. Microscopically, no changes were demonstrable to explain this atrophy. Rather few islets of Langerhans were present in the sections of pancreas available for study; in these sections at least, no degenerative changes were evident.

The kidneys showed rather extensive arteriolar sclerosis and typical lesions of nodular diabetic glomerulosclerosis.

The fifth and sixth ribs on the right, and the sixth and seventh ribs on the left were fractured. The sections of ribs available are insufficient for an estimation of the precise time at which the fractures occurred. They could have resulted from resuscitative attempts during the agonal period, or could have been incurred at the time of the accident.

In a microscopic examination of the lung sections, I found two small arterioles containing bone-marrow emboli. I believe they should be regarded as an interesting incidental finding having no significance with respect to the patient's death. Bone marrow emboli do serve as an index of skeletal trauma, usually though not always associated with fractures. In this case, the bone marrow emboli may have resulted from the rib fractures. Bone marrow emboli can develop quite rapidly, for they are seen in cases of apparently immediate death from trauma and in patients who have sustained rib fractures during agonal cardiac-resuscitative attempts.

In summary, the autopsy findings include diabetic glomerulosclerosis, coronary atherosclerosis, an old healed myocardial infarct and evidence of congestive heart failure. Added to this background of more long-standing diseases was a traumatic hematoma of the liver of recent origin. The immediate cause of death is thought to have been the intraperitoneal hemorrhage from a rupture of this hematoma.

Dr. Behlke: Did you find anything in the right lung base?

Dr. Givler: In the sections we have of the lung, there is no pneumonia. There are some heart-failure cells. I don't know for sure whether the prosector took sections from the right base.

Dr. Sheets: Are there any questions?

Dr. J. A. Gius, Surgery: Could the elevation of the right hemidiaphragm have been a result of the hematoma in the liver?

Dr. Behlke: I don't think that at first glance one could interpret the films as showing a significant elevation of the right hemidiaphragm. With a density such as is contiguous with the right base, you might get a little splinting elevation effect, but I wouldn't initially get the impression that the right hemidiaphragm itself was abnormally elevated.

Dr. W. E. Connor, Internal Medicine: I should like to ask Dr. Givler what he postulates as the mechanism of this rather sudden death. Did the patient lose enough blood into the peritoneal cavity to die of blood loss, or did he die of shock as a result of pain, or from cardiac asystole?

Dr. Givler: In the absence of peritoneal reaction, one might postulate that the hematoma was produced in the liver at the time of the accident, that it increased in size from continued bleeding, and that it subsequently ruptured into the peritoneal cavity. This delayed rupture of the hematoma may have accounted for the sudden onset of the patient's agonal course.

Dr. Connor: Are you actually postulating that his demise resulted from a disturbance in cardiac mechanism?

Dr. Givler: That might be a good guess, in view of the congestive heart failure and evidence of a coronary artherosclerosis sufficient to have produced the old myocardial infarct. I believe the immediate cause of death was intraperitoneal hemorrhage, and that quite likely the hemorrhage was a sudden one, due to a delay in rupture of the hepatic hematoma. I don't know the exact mechanism of death that resulted from the hemorrhage. The patient's heart was diseased, and it would be the prime suspect as the primary target for the effects of altered physiology, but this is just a guess.

Dr. Stone: Has anyone in the room seen a patient with congestive cardiac failure without ascites but with generalized abdominal tenderness?

Dr. Sheets: There is no answer.

Student: Why do patients develop generalized abdominal tenderness with ascites?

Dr. Stone: I don't know. The tenderness is slight. I have attributed it to edema and congestion of the peritoneum.

Dr. Sheets: Dr. Ziffren, why do you think this man died?

Dr. Ziffren: Well, my ideas are like Dr. Givler's. I believe he had a sudden and tremendous loss of blood. He went into shock, and his heart started having an arrhythmia that killed him. Since I'm in the position of knowing what was found at autopsy in this man, I can talk freely about it.

Most people carry slides around, but I've gone even farther. I have a motion picture. It takes about three minutes, and displays ruptured liver much more satisfactorily than I can describe it in words.

People who have nonpenetrating abdominal injuries, of course, present the most difficult ones of the problems we have to consider when multiple fractures or multiple injuries are present. Of course when someone has a car accident, with outstanding fractures, the tendency is to overlook

the abdomen. This omission can be very dangerous.

Rupture of the liver can occur from very violent injuries, but it can also occur from surprisingly trivial ones. The most common cause of this injury is what occurred to this patient—being struck in the lower chest by the steering wheel. When such a patient comes into the hospital it is very important that we suspect this phenomenon, if he has been struck in this fashion or if he has some bruises in this area. We must consider this possibility if he has an injury to some fixed organ in his abdomen, whether it be the liver, the spleen, the kidney, or a fixed portion of the gastrointestinal tract. The patient can be in marked shock, or he can have just a minimal amount of tenderness, but it is incumbent upon the examiner to be suspicious. It can be recognized, of course, only as a result of repeated examinations and continual suspicions.

If, for instance, one has a patient who has a head injury, and perhaps is unconscious and in shock, the probabilities are that he has something else wrong with him. It is extremely rare for a head-injury patient to be in shock, for if he has gone into shock from a head injury, he ordinarily arrives dead. He just doesn't last long. If for example a patient has a questionable abdominal injury, if he is unconscious from a head injury, and if the examiner has a greater response from palpating his abdomen than he does from pressing on his supra-orbital nerves, the possibilities are that there is something amiss inside the abdomen.

Such patients can have other symptoms, of course—vomiting, perhaps, or pain, if they are conscious— but the most important technic that is available to us is an abdominal tap, a tool which is too frequently forgotten. Using a No. 18 spinal needle with a stylet in it, one inserts the needle into the abdominal wall about 5 cm. below the umbilicus. When he gets through to the peritoneal cavity, he withdraws the stylet, attaches a syringe, and aspirates. Either blood or bile in the aspirated fluid is indicative of a liver injury, thus providing a clue. Of course, obtaining nothing on aspiration still does not rule out such damage. Indeed, what one probably should do under those circumstances is to tap the abdomen the same way in the four quadrants.

The danger in a liver injury, of course, is not only from leaking blood, but from the tearing of the biliary tree, with bile escaping and a resulting bile peritonitis. If we have a patient with this problem, we try to do three things: 1. We try to stop the bleeding. 2. We try to remove the dead tissue. A liver can be torn or a part of a lobe can actually have ripped free, and so we remove the devitalized tissue. 3. We always drain the abdomen. It has also been proposed recently that in all such injuries the common bile duct should be drained as well.

Now, in stopping the bleeding, we have to use sutures. Sometimes we might use absorbable material like Gelfoam tied within the sutures, but we never use packs. Packs are notorious for producing infection and subsequent hemorrhage. One must drain adequately, employing multiple drains, ordinarily through separate incisions, for they will drain bile, they will drain blood, and there probably will be some devitalized tissue that must have a point of exit.

When the surgeon is faced with this problem and when the bleeding is profuse, one of the simple aids is to get an assistant to put one of his fingers on top and one behind, through the foramen of Winslow, to squeeze off the hepatic pedicle. This can be done safely for at least 10 to 15 minutes, and during that length of time the operator can go ahead and stop the bleeding.

This can be a difficult diagnosis. I am surprised we don't see it more often, and it probably occurs many times without being recognized. We don't always know what happened because we don't obtain an autopsy in each instance.

Delayed rupture of the liver can occur. A tremendous hemorrhage takes place within the liver, and it suddenly gives way. It's been known to occur as late as one month after such an injury.

Now, let's show the motion picture. You will note the liver is being sutured by means of catgut on large needles, so that the entire substance of the liver can be penetrated. The devitalized portion of the liver is being removed. It is dangerous to leave the damaged liver within the abdomen, for it almost always has some bacteria lodged within it, and they often are spore-forming bacteria. The drains should be left in place for several days to make sure that the clot is well established.

SUMMARY OF NECROPSY FINDINGS

Intrahepatic hematoma, with tear of hepatic capsule and intraperitoneal hemorrhage
Atherosclerosis of coronary arteries
Old healed myocardial infarction, posterior wall of left ventricle
Cardiac hypertrophy
Nodular diabetic glomerulosclerosis
Atrophy of pancreas, cause undetermined
Fracture of fifth and sixth ribs, right, and sixth and seventh ribs, left
Bilateral pleural effusion

STUDENTS' DIAGNOSES

Cardiac arrhythmia due to acute myocardial infarction
Atherosclerotic heart disease
Congestive heart failure with pulmonary edema
Diabetes mellitus with nephropathy and neuropathy
Possible pulmonary embolus

DR. STONE'S DIAGNOSES

Traumatic rupture of liver with hemorrhage
Diabetes mellitus with glomerulosclerosis and neuropathy
Congestive heart failure due to coronary heart disease



APPRECIATION FOR SUPPORT OF OUR JOURNAL

The attention of IMS members is directed to the advertisements that appear in the JOURNAL. Continued publication of the magazine in its present form depends upon them.

Doctors are urged to patronize the JOURNAL'S advertisers, whenever possible, to mention the firms' ads in their conversations with the respective detail men, and to express appreciation to them for their firms' participation and support.

Without the continued cooperation of the drug-manufacturing industry and of the other suppliers of things medical and paramedical, the financial burden of publishing magazines consistent with the dignity of the profession and maximally useful to individual physicians might easily become too heavy for state medical societies to bear. We feel that the state journals have an important function, and that they are important and effective vehicles for the projection of products to the individual doctor.

PHYSICIANS' REPORTS OF VENEREAL DISEASE CASES

The American Social Health Association has made a summary report of the incidence of venereal diseases in the United States for the period April 1 to June 30, 1962, from information obtained by a questionnaire sent to each of 183,000 physicians in private practice. Its questionnaire had asked doctors three questions: (1) How many cases of infectious syphilis did you treat in the period from April 1 to June 30, 1962? (2) How many cases of other stages of syphilis? (3) How many cases of gonorrhea?

There were replies from 131,245 physicians, or 71.7 per cent. The number of doctors treating venereal diseases totaled 45,016, or 34.3 per cent.

A comparison of the information from physicians and the pertinent public health records provided some startling news. During the three-month period 7,082 physicians had treated 13,930 cases of infectious syphilis, but only 1,576 or 11.3 per cent of them were reported to the health authorities. In the same period, 14,959 doctors treated 34,069 cases of syphilis at other stages, of which 12,785 or 37.5 per cent were reported. The cases of gonorrhea treated by 37,535 physicians during the same period numbered 156,515, but only 10,907 or 10.8 per cent of them were reported.

From this survey covering just a three-month period, it was estimated that for the fiscal year 1962 there were 68,977 treated and 20,084 reported cases of infectious syphilis in the United States; 190,370 treated and 104,104 reported cases of other stages of syphilis; and 817,713 treated and 260,468 reported cases of gonorrhea.

A tabulation of replies to the questionnaire revealed that 56.6 per cent of general practitioners were treating venereal disease. Of the specialists, it showed that 62 per cent of urologists, 40 per cent of internists, 39 per cent of dermatologists and almost 28 per cent of obstetricians and gynecologists were treating these conditions. But doctors in all of the other specialties were treating such patients; even 1.0 per cent of the radiologists were in on the act.

The record of Iowa physicians is of particular interest. Iowans had sent back 1,923 of the questionnaires, and 553 or 28.8 per cent of them had treated venereal disease during the three-month period inquired about. Fifty-four physicians had treated 87 cases of infectious syphilis, of which only five (5.7 per cent) were subsequently reported. Other stages of syphilis numbering 273 had been treated by 151 physicians, and 184 (67.4 per cent) of them were subsequently reported. A total of 1,163 casses of gonorrhea had been treated by 462 physicians, of which only 15.7 per cent were afterwards reported.

On the basis of data from Iowa physicians covering the three-month period, it was estimated that for the fiscal year 1962 there were 357 cases of infectious syphilis treated in this state, of which only 5.6 per cent were reported to the health authorities. A similar projection indicated that there were 5,138 cases of gonorrhea treated here during 1962, of which only 25.8 per cent were reported.

This record indicates an utter disregard among Iowa physicians for the law which requires the reporting of venereal diseases. The statute requiring such reports was enacted for the protection of the public, and physicians should comply with it.

There are some mitigating circumstances concerning the reporting of syphilis cases. It is the practice of private laboratories in Iowa to send blood from patients with positive serologies to the State Hygienic Laboratory for confirmation, and the State Laboratory reports all new records of positive serology to the State Department of Health. The State Department then gets in touch with the patient's private physician. In this manner the Venereal Disease Division of the State Department of Health gains knowledge of each new patient with this disease, and it is the opinion of R. H. Heeren, M.D., director of the Division, that few cases of syphilis actually go unreported. On the other hand, the reporting of gonorrhea is no better than the notoriously poor reporting of measles. It seems likely that most cases of gonorrhea are not confirmed by smear or culture, but

Editorials continued...

that patients with discharge are arbitrarily treated as having gonorrhea.

The Venereal Disease Division of the State Department of Health has three full-time and two part-time trained workers. The prompt reporting of cases of syphilis and gonorrhea facilitates early detection of the source of infection and immediate interviews with contacts. In this manner, further spread of the disease can be reduced and treatment initiated.

Venereal disease is on the increase all over the world, and the greatest increase is occurring among young people of high school and college age. The full cooperation of the medical profession with the public health agencies is necessary if these diseases are to be controlled. Prompt reporting of the infectious case is fundamental to that cooperation.

VERTEBRO-BASILAR INSUFFICIENCY

The syndrome of vertebro-basilar insufficiency or ischemia has recently received considerable attention in the British literature. Bradshaw and McQuaid* state that in their experience it is one of the most frequent diagnoses in neurologic practice, more common than multiple sclerosis and outnumbering all other disturbances in the posterior cranial fossa. Denis Williams** points out that transient reversible disturbances of neural function are often seen in older patients, and that they can be very perplexing, for at the time they occur they have no obvious cause and there is no rational basis for treatment or prognosis.

The clinical picture of vertebro-basilar ischemia is one of transient and recurrent neurologic symptoms, often accompanied by physical signs which indicate lesions in the areas supplied by the vertebral, basilar or posterior cerebral arteries. It occurs particularly in older arteriosclerotic patients who may have hypertension or some other systemic disease. The recurrent episodes are frequently called "little strokes."

It is now believed that "little strokes" as a consequence of ischemia are the result of a disorder of function without an actual disturbance of structure. The diminished blood flow is ascribed to atheromatous involvement of the vertebral or basilar arteries within the thorax, neck or cranium. In addition, there are numerous ancillary factors which may contribute to diminished blood flow. Reduction of systemic blood pressure from any cause—particularly ischemic heart disease and cardiac arrhythmias—may precipitate attacks. Arthritis of the cervical spine may interfere with the blood flow in the vertebral arteries. Neck movements such as extreme extension in looking at the zenith, or extreme rotation as in backing a car, may compress the arteries and compromise the blood supply. The idea that the episodes are due to vasospasm is no longer considered tenable.

Much of the advance in understanding the many factors involved in vertebro-basilar insufficiency has resulted from a study of the vascular lesions by angiography. It has been demonstrated that severe stenosis or even complete occlusion of a large vessel may occur without infarct, as long as the collateral flow is adequate, thus explaining the fluctuating, recurring and reversible neurologic symptoms. It has been shown that narrowing of the involved artery may be remote from the involved ischemic area, and that the rate of flow in any artery depends upon many factors—the state of the blood vessel itself, the anastomosis with another vessel, and the systemic blood pressure. Angiography has demonstrated that ischemic episodes may occur without a gross vascular lesion, and in the aging patient, hypotension relative to individual needs is important in inducing central ischemia. It is now realized that many patients need an elevated blood pressure to provide an adequate blood supply to the central nervous system, and that some of the adverse effects of hypotensive drugs are identical with the symptoms of central ischemia. Angiography has also shown an unusual collateral circulation in the brain, through the circle of Willis, through anastomoses between small vessels in the posterior fossa, and between the vessels within and without the skull.

The onset of an episode of vertebro-basilar insufficiency is most often characterized by vertigo accompanied by visual disturbances—commonly diplopia and not infrequently a brief period of unconsciousness or "blacking out." A patient may awaken from sleep with dizziness, ataxia and diplopia, or with aphasia, paresthesias or muscle weakness. In a group of 54 patients reported by Bradshaw and McQuaid, nearly four-fifths complain of vertigo, which was almost always rotatory, and which, if severe, was accompanied by ataxia. The absence of tinnitus and usually of deafness, and the short duration of symptoms, suggested a central rather than a peripheral origin.

Disturbance of vision was next in order of frequency, occurring in 37 of the 54 patients. Headache was a common symptom, being a serious complaint in 29 of this group, and it frequently persisted after the other symptoms had disappeared. Other common symptoms were ataxia, vomiting, paresthesias, muscular weakness, disturbances of consciousness and speech disorders. Rarely, deafness was complained of.

The physical findings in the 54 patients reported by Bradshaw and McQuaid consisted of residual nystagmus between attacks in 42 patients, various types of external ophthalmoplegia in many, and

* Bradshaw, P., and McQuaid, P.: Syndrome of vertebro-basilar insufficiency. QUART. J. MED., 32:279-296, (Oct.) 1963.

** Williams, D.: Vertebro-basilar ischemia. BRITISH M. J., 1:84-88, (Jan. 11) 1964.

defects in visual fields in a few patients. Facial palsy was found in nine patients, and sensory loss over the face was demonstrated in six of the group. Cerebellar ataxia of mild degree occurred in 18 of the 54 patients and evidence of pyramidal tract involvement was present in 20 patients but it seldom seriously handicapped the individual. Rather, it caused relative weakness, slight spasticity and increased deep-tendon reflexes.

The natural history of vertebro-basilar ischemia, according to Williams, consists of brief, recurring minor episodes over months or years, to which the patient may have become accustomed. It is only after a more severe episode that the physician can elicit the history of recurring minor attacks. The episodes are common after the age of 60, and their association with transient reduction in blood flow offers an explanation for a miscellany of otherwise quite inexplicable symptoms which the practicing physician often encounters.

Williams points out that in the elderly patient with recurrent mild episodes, there is a good prognosis at the time and in time. The outlook is better in those patients in whom the symptoms can be related to a fluctuating hypotension or to neck movement, and is more grave when no precipitating cause is apparent. He also emphasizes that early in the management of this group of patients it is important to recognize the young, generally healthy individual who has distressing and ominous attacks because of gross local stenosis for which vascular surgery may offer hope of relief. It is this individual who should be given the benefit of diagnostic studies by angiography, but this should be undertaken only when there is a likelihood of a lesion amenable to surgery. Arteriography of these vessels is contraindicated in the older arteriosclerotic patient in whom episodes of relative hypotension precipitate attacks.

Treatment of 49 of the 54 patients reported by Bradshaw and McQuaid consisted of bed rest and sedation with phenobarbital until the acute symptoms had subsided. If vomiting was troublesome, 25 mg. of chlorpromazine was given by injection, as necessary. Five patients received anticoagulant therapy.

According to Williams, the most important part of the treatment is attention to the patient's pattern of living, including an increase in daily exercise and efforts to raise rather than lower the blood pressure. He states that the use of anticoagulants is controversial, and that most of the evidence is against their use. However he does assert that in disturbance of blood flow due to stenosis proximal to the circle of Willis, the situation is comparable to coronary occlusion, in which if there is time, a collateral circulation may become established and anticoagulant therapy may prevent extension of the thrombus.

Although the ischemia which results from atheroma of the vertebro-basilar vessels involves the brain stem and can produce alarming symptoms, the outcome in the 54 patients reported by Bradshaw and McQuaid suggests that it is a relatively benign condition. Six patients were given anticoagulants, and one of these succumbed within a few days after initiation of therapy from thrombosis of the basilar artery, but two were well and free from neurologic defect after two years and seven years, respectively, two had made good progress (one had had occasional mild attacks after 18 months, and the other had had no further attacks but still had nystagmus and slight ataxia after a year), and one other patient continued to have attacks but was free of any physical signs. Of the remaining 48 patients, one died from cerebral hemorrhage; two were lost from study after six months; and 45 were followed for periods ranging from six months to five years and averaging over two years. None of these patients had received any specific therapy. Fourteen have no signs or symptoms; 15 are free of symptoms but still have minor neurologic signs; and seven have occasional attacks and have minor neurologic findings. In all, 36 of the 54 patients have done well and are able to lead normal lives.

A SIMPLE PREVENTIVE

There is a tendency for medical journals to publish articles on rare or exotic diseases, and not to present information on the prosaic problems which confront the physician in everyday practice. Probably one of the most frequent complaints heard by the practicing physician is that of constipation. It is voiced with particular frequency by patients in the geriatric age group, who lead a sedentary life and who all too frequently are not eating a balanced diet. It has been recognized for many years that the laxative habit, though a very common one, is pernicious. A recent contribution by Ross and Ross* on the subject of nutrition in geriatrics offers sound advice on this topic that should be helpful to physicians in the management of their elderly patients.

The first requirement in the Ross plan of management is for bodily exercise, beginning with self-care and increasing to regular walks and puttering in the garden. A full glass of water one-half hour before breakfast is a "must" in order to initiate peristaltic activity. Breakfast should be eaten deliberately and with relish, rather than "wolfed down." The drinking of water is encouraged, for if the sedentary individual forgets to drink water, the supply of moisture in the large bowel becomes insufficient and the feces grow dry and hard.

The Rosses recommend a dried-fruit recipe that they have found most helpful in retaining water in the large intestine and thus relieving constipation. The recipe provides a supply for several

* Ross, C. H., and Ross, J. A.: Nutrition in geriatrics. J. MICHIGAN M. SOC., **62**:878-881, (Sept.) 1963.

Editorials continued...

breakfasts, and it does not require the addition of sugar:

A half pound of dried apricots
A half pound of dried figs
A half pound of dried prunes
A half pound of dried raisins.

Soak overnight in two pints of water; bring to a boil in the morning, and then allow to simmer for 45 minutes. Do not boil the fruit out of shape. Cool and refrigerate. Serve two ounces at breakfast. This sauce may be covered with two ounces of fruit juice—a different one from day to day.

The Ross team, which consists of a geriatrician and a dietitian, contends that as time passes—indeed within 30 minutes after breakfast—a bowel movement can be expected. The pattern of post-breakfast evacuation can be depended upon, even though a lifetime of constipation has been reported in the history. The patient must be made to understand that laxatives are not the solution to his or her constipation problem, and that by a conscientious adherence to the recommended dietary program at least one difficulty can be resolved.

OBESITY

A recent contribution to the management of the obese patient by Dr. Charlotte M. Young* reflects 20 years of experience with the problem. She is professor of medical nutrition in the Graduate School of Nutrition, Cornell University, Ithaca, New York, and her evaluation of the problem should be helpful to the clinician who is confronted with patients who are overweight.

She points out that there is no magic formula or easy way to reduce, and that patients should not be misled into thinking that there is. Early in the management of these patients, certain fundamental concepts must be impressed upon them: (1) No metabolic disorder is involved in their excess avoirdupois. (2) Modern living conditions are conducive to a positive energy balance. (3) The only manner in which a patient is going to lose fat is by having an energy output in excess of intake, so that body fat is burned.

From her experience at Cornell, Dr. Young has found it helpful to place obese patients in three general groups, depending upon their degrees of emotional stability. The first group consists of those with poor food habits and little knowledge of food values, who are quite stable emotionally. The second group includes those patients with superficial emotional problems. These people are anxious, tense and insecure, and whenever they are confronted with situations that create unusual tension or anxiety, they overeat to allay their emotional reaction. This group needs emotional support, help in the development of insight into their use of food, and a satisfying reducing diet while they resolve their emotional difficulties.

The third group of patients possess deeper emotional problems, and no matter how hard one tries to help such people, they usually fail to lose weight. These are unfortunate individuals who meet life's situations by overeating. They try to reduce, but they just cannot do so, and a feeling of guilt is thus added to their already difficult emotional problems. It is this last group who may be harmed by an attempt at weight reduction.

It is the physician who must choose the patients who are suitable for weight-reduction programs. The author emphasizes that only those should be selected in whom there is a reasonable likelihood of success and for whom undesirable sequelae seem improbable. The doctor must take into consideration the patient's personality and his motivations. If any measure of success is to be achieved, the patient must have a reason, meaningful for him, for undertaking an obviously unpleasant reduction of food intake or increased physical activity. This motivation must come from the obese patient himself, and not from his relatives or friends, or from his physician.

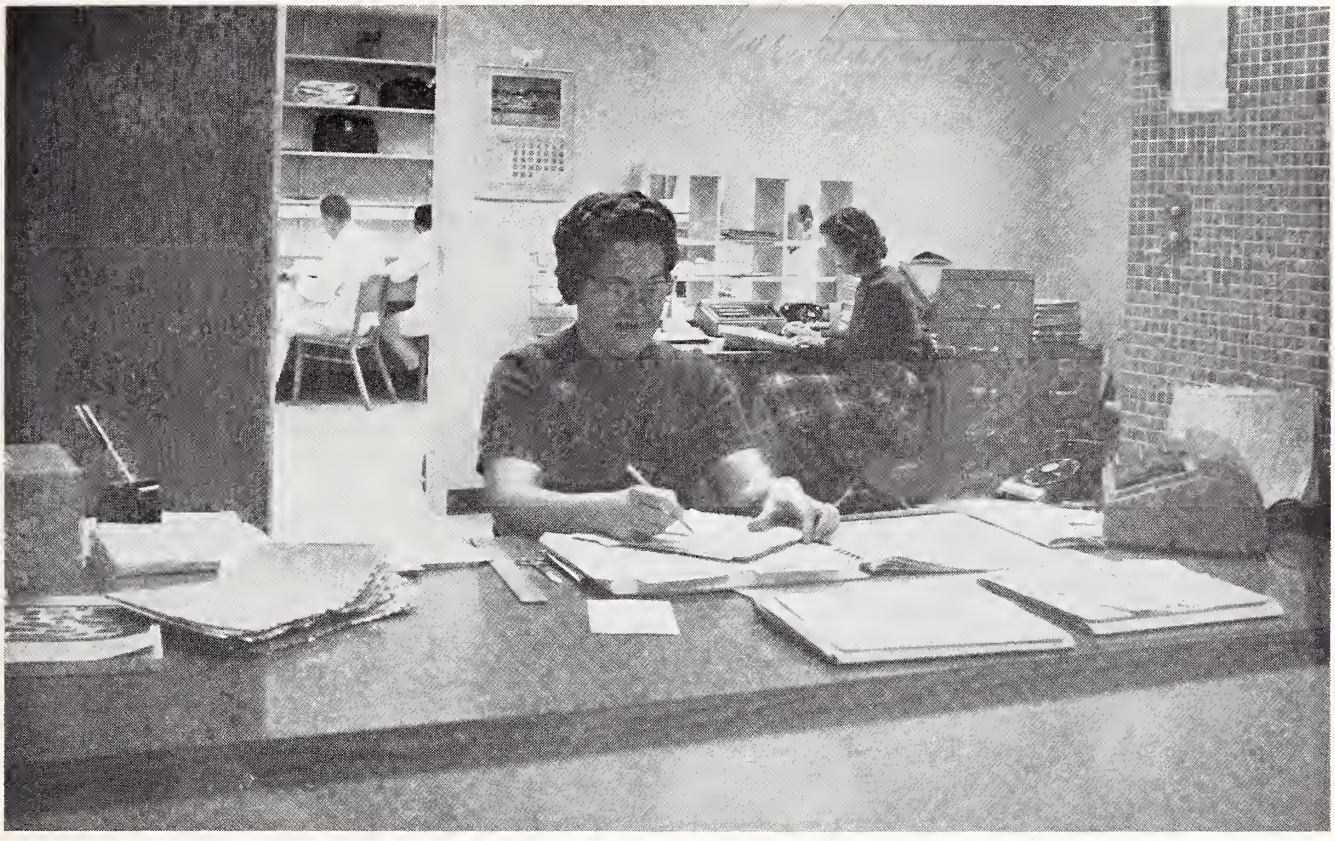
Judging from the experience at Ithaca, she concludes that the patients who are most likely to succeed in weight-reduction are (1) reasonably well adjusted emotionally; (2) in the early stages of obesity; (3) recently overweight, rather than obese from childhood; (4) not handicapped by a failure at weight reduction; or (5) once more obese after a previously successful program of weight reduction. Dr. Young says that for a patient who meets these criteria, weight reduction is possible if the physician is willing to give unjudging, unchastising, non-threatening support and sound dietary and physical-activity advice during frequent contacts over a period of time.

She emphasizes that, at best, once excessive weight has been accumulated, treatment can't be painless and results are often discouraging. The only real answer to the obesity problem is prevention. One must attack the roots of the problem —psychological, sociologic, cultural and economic. Stress should be placed upon prevention by educational measures. The similarity between the problems of obesity and alcholism is apparent.

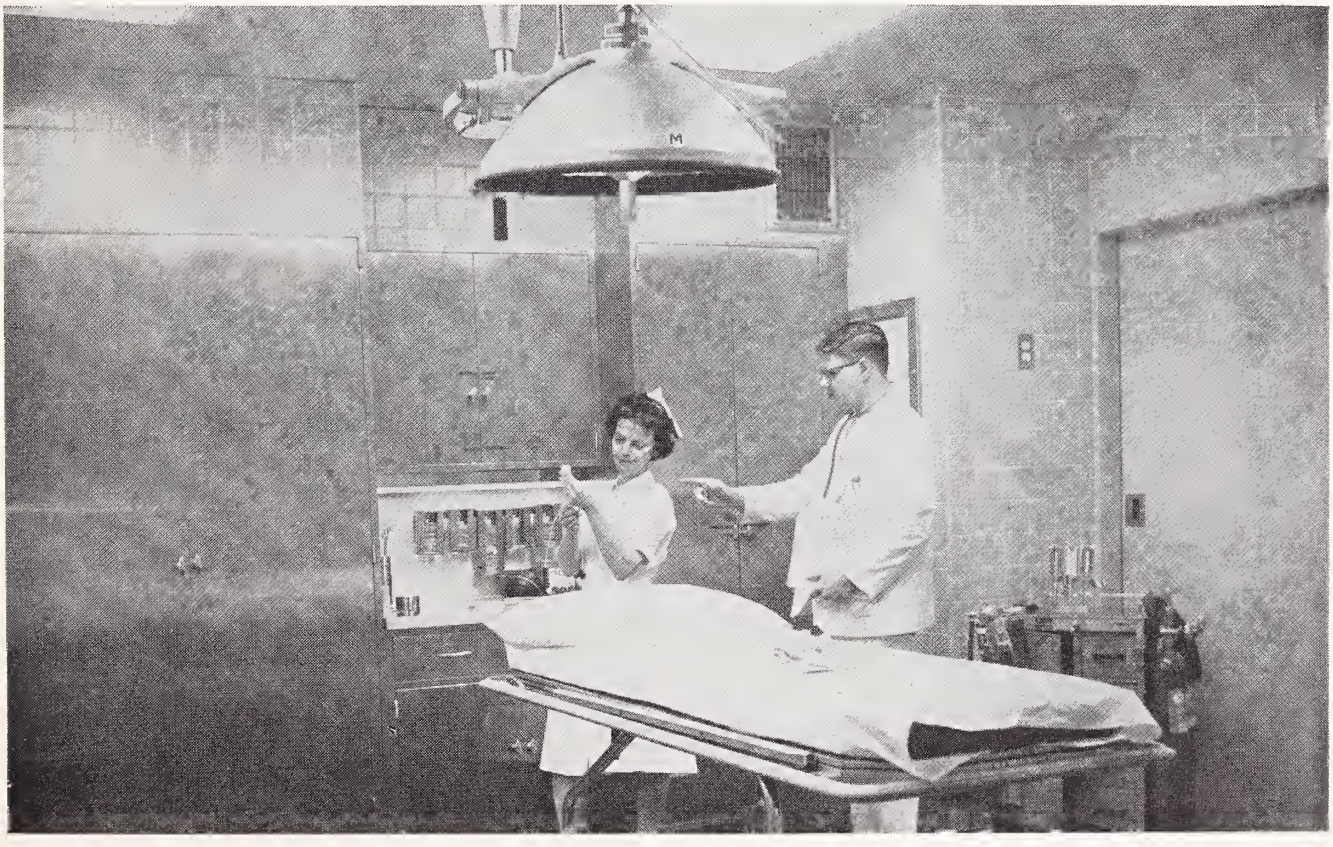
* Young, C. M.: Management of obese patient. J.A.M.A., 186:903-904, (Dec. 7) 1963.

Have You Sent Us Your Change-of-Address?

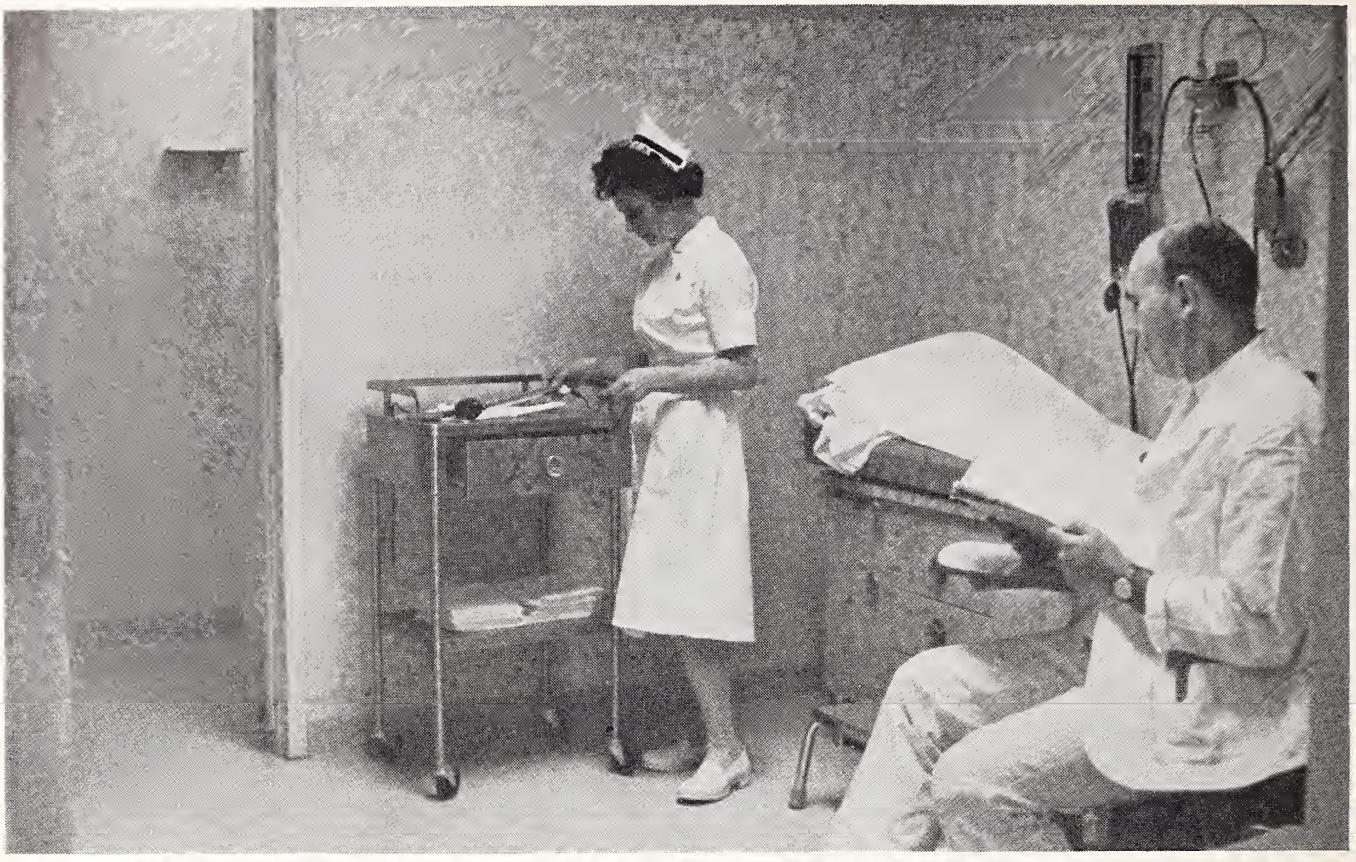
Postal regulations now forbid the forwarding even of first-class mail, in some instances, without payment of extra postage. Even when a house number is slightly incorrect and when the postman knows the addressee, the rules forbid delivery. We urge promptness on the part of member physicians in reporting address changes or inaccuracies.



The surgical outpatient and emergency area at University Hospitals has been completely redesigned and re-equipped. This view shows the clinic office and the room in the background which is used by residents and interns for write-ups. A new patient waiting room occupies the space in front of the desk.



Mrs. Helen Hamann, head nurse, and Dr. Peter Warner, an intern, are shown in one of the three emergency rooms. The rooms are all connected and contain identical arrangements of cupboards and equipment—a great time-saver in dealing with emergencies. A similarly designed room is used for plaster work.



Mrs. Hamann and Dr. Glenn Crosby, third-year resident in surgery, are shown in one of the six examining rooms.

Coming Meetings

IN STATE

Apr. 4	**Orthopaedic and Rehabilitation Seminar.** Younker Memorial Rehabilitation Center, Des Moines.
Apr. 8	**Iowa Thoracic Society.** Hotel Savery, Des Moines.
Apr. 10-11	**Blank Hospital Pediatric Conference.** Auditorium, Iowa Methodist School of Nursing, Des Moines.
Apr. 24-25	**Iowa Eye Association.** State University of Iowa, Iowa City.
Apr. 26-28	**Iowa Medical Society.** Hotel Fort Des Moines and Hotel Savery, Des Moines.
May 13	**Adult and Child Neurology,** State University of Iowa College of Medicine, Iowa City.

CONTINENTAL U. S.

Apr. 1-3	**American Surgical Association.** Homestead, Hot Springs, Virginia.
Apr. 1-3	**Pediatric Advances 1964.** Ohio State University College of Medicine, Columbus.
Apr. 2-4	**Current Concepts in the Physiology of Respiration, Circulation, and Electrolytes.** Atlantic City.
Apr. 3-5	**American Society of Internal Medicine.** Atlantic City.
Apr. 3-5	**American Association of Pathologists and Bacteriologists.** Drake Hotel, Chicago.
Apr. 5-6	**American Otological Society.** St. Francis Hotel, San Francisco.
Apr. 5-8	**International Academy of Pathology.** Chicago.
Apr. 6-7	**Pediatrics.** University of Nebraska College of Medicine, Omaha.
Apr. 6-8	**Ophthalmology.** University of Kansas School of Medicine, Kansas City, Kansas.
Apr. 6-9	**Spring Congress in Ophthalmology.** Patrick Henry Hotel, Roanoke.
Apr. 6-10	**American College of Physicians.** Convention Hall, Atlantic City.
Apr. 7-8	**American Broncho-Esophagological Association.** St. Francis Hotel, San Francisco.
Apr. 7-9	**American Laryngological, Rhinological and Otological Society.** St. Francis Hotel, San Francisco.
Apr. 9-11	**American Association for Cancer Research.** Edgewater Beach Hotel, Chicago.
Apr. 9-11	**Endocrinology and Metabolism.** University of California Continuing Education Department, San Francisco.
Apr. 9-11	**Heart Diseases in Pediatric Patients.** University of Wisconsin School of Medicine, Madison.

Apr. 10-11 **American Laryngological Association.** St. Francis Hotel, San Francisco.

Apr. 12-15 **American Society of Maxillofacial Surgeons.** Shamrock Hilton Hotel, Houston.

Apr. 12-17 **American Physiological Society.** Morrison Hotel, Chicago.

Apr. 13-15 **Anesthesiology.** University of Kansas School of Medicine, Kansas City, Kansas.

Apr. 13-16 **American Industrial Health Conference.** Pittsburgh-Hilton Hotel, Pittsburgh.

Apr. 13-16 **Annual Scientific Assembly of the American Academy of General Practice.** Convention Hall, Atlantic City.

Apr. 19-22 **American Society of Abdominal Surgeons.** Sherman Hotel, Chicago.

Apr. 22-25 **Eighth Postgraduate Course in Trauma.** John B. Murphy Memorial Auditorium, Chicago.

Apr. 23-24 **Conference on Problems in Ophthalmology.** University of Missouri Medical Center, Columbia.

Apr. 23-25 **American Gastroenterological Association.** Sheraton Hotel, Dallas.

Apr. 23-25 **Clinical Dermatology.** University of Colorado Medical Center, Denver.

Apr. 27-28 **Otorhinolaryngology.** University of Kansas School of Medicine, Kansas City, Kansas.

Apr. 27-28 **Society of Head and Neck Surgeons.** Peabody Hotel, Memphis.

Apr. 27-29 **American Association for Thoracic Surgery.** Queen Elizabeth Hotel, Montreal.

Apr. 27-30 **Nebraska State Medical Association.** Cornhusker Hotel, Lincoln.

May 1-2 **Congress on Environmental Health Problems,** Sheraton-Chicago Hotel, Chicago.

May 4-6 **Kansas Medical Society,** Jayhawk Hotel, Topeka.

May 4-8 **American Psychiatric Association,** Biltmore Hotel, Los Angeles.

May 5-6 **Association of American Physicians,** Chalfonte-Haddon Hall, Atlantic City.

May 5-15 **International Postgraduate Course in Nasal Surgery,** University of Cincinnati College of Medicine and Christ Hospital, Cincinnati.

May 6-8 **American Association of Genitourinary Surgeons,** Westchester Country Club, Rye, New York.

May 7-9 **Mid-Central States Orthopaedic Society,** Continental Denver, Denver.

May 7-9 **Society of Neurological Surgeons,** Rochester, Minnesota.

May 9-14 **American Proctologic Society and the Section of Proctology of the Royal Society of Medicine,** Bellevue Stratford Hotel, Philadelphia.

May 11-12 **Surgery and Trauma,** University of Nebraska College of Medicine, Omaha.

May 11-14 **Aerospace Medical Association,** Americana Hotel, Miami Beach.

May 11-14 **American Urological Association,** Penn-Sheraton Hotel, Pittsburgh.

May 11-15 **Clinical Auscultation of the Heart,** Georgetown University Hospital, Washington, D. C.

May 13-16 **American Association of Plastic Surgeons,** Drake Hotel, Chicago.

May 17-21 **Illinois State Medical Society,** Sherman House, Chicago.

May 17-22 **American College of Obstetricians and Gynecologists,** Americana Hotel, Bal Harbour, Florida.

May 18-20 **Minnesota State Medical Association,** Kahler Hotel, Rochester, Minnesota.

May 20-21 **Clinical Advances in Medicine and Pediatrics,** University of Missouri Medical Center, Columbia.

May 21-22 **Annual Colorado Intern-Resident Clinic,** University of Colorado Medical Center, Denver.

May 22-23 **Chicago Ophthalmological Society,** Drake Hotel, Chicago.

May 25-27 **American Gynecological Society,** Homestead Hotel, Hot Springs, Virginia.

May 25-27 **American Thoracic Society,** Statler Hotel, New York.

May 25-29 **The Medical Care of the Adolescent,** The Children's Hospital Medical Center, Boston.

May 25-29 **Western Cardiac Conference,** University of Colorado Medical Center, Denver.

May 27-28 **Allergy and Immunology,** University of Nebraska College of Medicine, Omaha.

May 28-30 **American Ophthalmological Society,** Homestead Hotel, Hot Springs, Virginia.

ABROAD

April 5-10 **Asia-Pacific Academy of Ophthalmology,** Melbourne, Australia. Sec-Gen: R. M. Mellar, M.D., Congress Office 82 Collins Street, Melbourne.

April 20-22 **Ciba Foundation Symposium on Disorders of Heart Muscle,** London. Info: 41 Portland Pl., London, W1.

Apr. 27-May 9 **Psychotherapy Week.** Lindau, W. Germany. Dir: Med. Helmuth Stolze, M.D., Adalbert Stiflerstrasse 31, Munich 8.

May 3-8 **American Otorhinologic Society for Plastic Surgery.** West End, Bahama Islands. Sec.-Treas.: Joseph G. Gilbert, M.D., 75 Barberry Lane, Roslyn Heights, N. Y.

May 10-14 **Asian-Pacific Congress of Cardiology.** Kyoto, Japan. Info: Magoiiro Maekawa, Kyoto University Hospital, Sakyo-ku Kyoto.

May 11-14 **American Psychiatric Association and Mexican Society of Neurology and Psychiatry.** Mexico City. Info: H. J. Tompkins, M.D., 144 W. 12th Street, New York 11.

May 11-16 **International College of Surgeons.** Hofburg, Vienna. Sec.-Gen.: Horace E. Turner, M.D., 1516 Lake Shore Drive, Chicago 10.

May 18-20 **American College of Physicians (Far East Session).** U. S. Naval Hospital, Yokasuka, Japan. Info: Capt. G. M. Davis, MC, USN, Commanding Officer, U. S. Naval Hospital, Navy No. 3923, San Francisco.

May 28-31 **National Congress of Surgery.** Bucharest, Rumania. Sec.: E. Papakagi, Rumanian Society of Surgery, 8 rue Progresul, Bucharest.

June 14-19 **Inter-American Congress of Cardiology,** Montreal. Sec-Gen: O. Gialloreto, M.D., Institut de Cardiologie, 5414 boul Assomption, Montreal 36.

June 15-20 **World Medical Association,** Helsinki, Finland. Sec-Gen: H. S. Gear, M.D., 10 Columbus Circle, New York 19.

June 21-27 **International Academy of Pathology,** London. Sec-Gen: F. K. Mostofi, M.D., Armed Forces Institute of Pathology, Washington 25, D. C.

President's Page



As I suppose was inevitable, I am completing my year as your president with mixed emotions.

My responsibilities on your behalf have been time-consuming, of course, and because the issues that the Society has confronted have been crucial ones, the possibility that I might disappoint your expectations has worried me. For those reasons, and because I am fully confident that our collective fortunes will be in capable hands, I am glad to relinquish my post.

I feel considerable satisfaction at having had a share in establishing the physician's "usual and customary fee" as the basis for compensation in the MAA program, and I hope it can soon be extended to others of the third-party programs with which medicine is involved. It also gratifies me that through numerous regional meetings and state-wide conferences, the Society, this year and last, has attracted the attention and interest of many members who hadn't previously familiarized themselves with the problems and objectives of organized medicine.

I am grateful for having had an opportunity to work intimately with the leaders of our profession in Iowa and throughout the United States; I want to thank the Society's staff members who have simplified my tasks whenever they could; and I want to thank all of you for according me the privilege of serving you.

C. W. Edwards Sr.

President

Group Life Insurance Program for Members of the Iowa Medical Society

W. O. PURDY, M.D.
Des Moines

THIS IS THE FINAL ARTICLE of this series and will deal with the life insurance program established for members of the Iowa Medical Society.

In 1958, the Committee on Group Insurance made a very comprehensive study of the various life insurance plans available, and recommended a plan offered by the Bankers Life Company of Des Moines, Iowa, for members of the Iowa Medical Society. This recommendation was approved by the Society's Executive Council and was implemented shortly thereafter. The program is being administered, at the present time, by the Prouty Company, of Des Moines, Iowa, headed by Mr. William Prouty.

After a study of the various programs available, it was felt that the offer which the Bankers Life Company presented was the most attractive in view of some unique features provided in its contracts. The most important of these features were as follows:

1. All active members, under insurance age 65,* are eligible.
2. Term insurance at low premium rates with the option to convert to any permanent plan of insurance issued by the Bankers Life Company, without evidence of insurability.
3. Premium rates based on age groups and guaranteed during the life of the policy.
4. Individual noncancellable policy with ownership transferable.
5. Double indemnity for accidental death prior to age 65. Waiver of premium for total disability occurring before age 60.
6. The policies would be participating and dividends provided at the end of the first year that the policies are in force.
7. Beneficiary designation and settlement option available are the same as those in any individual policy provided by the Bankers Life Company.
8. Once the policy is issued, the contract cannot be terminated as long as the premiums are paid, irrespective of the location of the insured or whether he retires or severs his connections with the State Society.

The amount of life insurance provided in this program is based on the age of the applicant as illustrated in the following table, and the insurance coverage reduces automatically at age 60 and 65 unless the policy has previously been converted to a permanent plan. The premium rates also increase automatically as the insured enters the successive attained-age groups.

Age—Nearest Birthday	Amount of Insurance
Under 30	$10,000
30-34	10,000
35-39	10,000
40-44	10,000
45-49	10,000
50-54	10,000
55-59	10,000
60-64	7,500
65-69*	5,000

* For renewal of insurance only.

During the enrollment period, a large number of the members of the Society enrolled in the plan, and more have joined since that date. The mortality experience has proved favorable, even though a number of accidental deaths occurred among the group shortly after the policies were issued.

Just recently, the Bankers Life Company has gone to the 1958 CSO Mortality Table for establishing premium rates on new policy contracts, and the new rates are very favorable, particularly at the younger ages. In view of the new rate structure and the favorable mortality experience on the old insurance, corresponding adjustments will be made through dividend changes on the old contracts, so as to bring the net cost of the old policies in line with the net cost of new policies that Bankers Life is now providing.

Dr. Purdy, the chairman of the IMS Committee on Group Insurance, is vice-president and medical director of the Equitable Life Insurance Company of Iowa.

* For purposes of life insurance, one becomes 65 years of age when he reaches 64 years and six months.

There will be another 60-day open enrollment period beginning April 1, 1964, which will give members not now enrolled an opportunity to purchase life insurance in the Iowa Medical Society group at a very favorable premium rate. If 150 of the eligible but previously non-covered members make application and accept the policies issued, they will be considered without evidence of insurability. We should point out that the accidental death benefit (double indemnity) provision in the new coverage has been liberalized so that benefits will be paid for accidental death to age 70, instead of just to age 65.

The Prouty Company will furnish each member, not now covered, with full details regarding the new coverage, as well as details pertaining to the open enrollment period. Any member desiring specific information about his policy or about the new coverage should correspond with the Prouty Company, 2124 Grand Avenue, Des Moines, Iowa.

The Committee on Group Insurance believes that the program provided for the members is an excellent one, and it urges members needing or desiring insurance coverage to make a careful study of the program offered for members of the Iowa Medical Society.

MAA Recipients

Approximately 72 per cent of the Iowans applying for medical aid to the aged are qualifying for assistance under the new program. The State Department of Social Welfare reported late in January that 2,786 applications had been processed. Of this total, action has been taken by the county welfare offices on 672 cases, resulting in 485 approvals and 186 rejections. By projecting the approval rate to the total applications received to date, welfare officials believe there will be approximately 2,000 recipients, provided there is no heavy increase in new applications.

On the basis of applications approved up to that time, the State Welfare Department has been able to determine the following characteristics:

1. Forty per cent of the approved persons are males, and 60 per cent are females.
2. The median age of these persons is 74, within a range from 65 to 101.
3. Approximately 96 per cent have monthly incomes averaging $77.11 each. Eighty-seven per cent are receiving OASDI benefits.
4. Approximately 46 per cent have real property.
5. Forty-three per cent have insurance that is considered a medical resource, though some recipients have indicated they will discontinue this coverage.
6. Just under 5 per cent have excess income to apply on their medical needs.
7. Forty-seven per cent live in their own homes or apartments with their spouses and an additional 23 per cent live alone. Only 7 per cent live in licensed nursing homes.
8. Fifty-three persons had received some form of assistance in the 60 days prior to application for MAA.

Of the 187 rejections, only 90 persons were rejected in the sense of not being eligible for MAA, and in the other 97 cases, the action of the applicant was the reason for rejection, according to state welfare officials. In 40 of the 90 cases, the person had an excessive amount of real or personal property, in 19 instances children or other relatives had assumed medical expenses, 13 had excess incomes above medical needs and 11 had not incurred $50 in medical expense during the prior 12 months.

In 75 of the 97 cases rejected for some action taken by the applicant, there were voluntary withdrawals with no reason given. Ten objected to the claim provisions and five wanted to apply for old age assistance.

Of the 75 persons who voluntarily withdrew their applications, only four appeared to be ineligible, and 48 appeared to be eligible in all respects. In 23 cases no determination of eligibility could be made because of insufficient information.

Iowa MAA Costs for First Month

The average payment per case in the first month of operation of Iowa's new Medical Assistance to the Aged (MAA) program was $142, and most of the money went to hospitals, the State Department of Social Welfare announced on February 6. A mass of applications, each requiring verification, got the program off to a slow start. Only 32 claims submitted by 25 persons were paid in January. They totaled $3,566, and were for services rendered in December, 1963.

The program pays certain health-care expenses for needy persons over 65 years of age who are not receiving state old-age pensions.

One-fourth of the claims paid in January were for hospital bills, but they averaged $288 each and took nearly 65 per cent of the money. There were only three claims for nursing-home care, averaging $152 and accounting for almost 13 per cent of the amount paid out. There were 11 claims for care by medical doctors, averaging $52 and accounting for nearly 16 per cent. Three claims paid for care by osteopathic physicans averaged $24; four claims for drugs averaged $23; chiropractors were paid for care in two cases, the amounts averaging $17; and there was one claim of $41 for visiting nurse service.

The Department warned that these 32 claims are too few to serve as a basis for estimating future costs.

THE JOURNAL *Book Shelf*



BOOK REVIEWS

MEDICINE AND THE STATE, by *Matthew J. Lynch, M.D.* and *Stanley S. Raphael* (Springfield, Illinois, Charles C Thomas, 1963. $9.75).

The objective study of the relationship of medicine to the state is a monumental accomplishment of this book. The authors, two Canadian physicians in active practice, have described in detail the characteristics of all systems of medical practice in which the government has an influence. This book is a knowledgeable source of how socialized medicine developed in various countries, the resulting quality of medical practice in the systems, and why government-sponsored plans degrade medical service and the men who practice.

Included is a discussion of manipulation of state-sponsored medical programs, by politicians for their own purposes, in such terms as bolstering sagging party popularity and foisting on the public plans which the electorate resented. The secretiveness of plans and programs employed by heads of government, the total disregard of advice which was requested from organized medicine and the refusal to grant audience to representatives of doctors when plans were being developed, produce dreary reading in parts of this book. In the setting up of plans, a universal defect was underestimating the cost.

The doctor who is regulated by the state has the dilemma of treating the patient and certifying him for social benefits, while at the same time acting as a judge to combat overuse, malingering and fraud.

The brightest area in medical practice, government style, is that found in Australia, where the enlightened physician-administrator has prevented the occurrence of most serious faults found in other systems.

There are some admirable passages which discuss the philosophy of those who practice medicine and their attitude in dealing with government agencies.

Part one of this volume describes the development of the system and its operation in each country. The second part appraises the facts previously presented. An adequate index provides easy reference to the wide variety of information the book supplies.

This volume is a source of facts for medical practitioners to use in their continuing effort to combat the political forces which would subject them to government domination.—*Ralph E. Smiley,* M.D.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the JOURNAL, 529-36th Street, Des Moines 12, Iowa.

BOOKS RECEIVED

PEDIATRIC THERAPY, ed. by *Harry C. Shirkey* (St. Louis, The C. V. Mosby Company, 1964. $16.50).

LYSOSOMES (Ciba Foundation Symposium), ed. by *A. V. S. de Reuck* and *Margaret P. Cameron* (Boston, Little, Brown and Company, 1964. $11.50).

Conference on Problems in Ophthalmology

A two-day conference designed to provide practical answers to ophthalmological problems which physicians may encounter in their everyday office practice is planned at the University of Missouri Medical Center Thursday and Friday, April 23 and 24. Drs. John A. Buesseler and Felix Sabates, chief and assistant chief of ophthalmology at the School of Medicine will preside, and each will present a part of the program. Other presentations will be made by Missouri physicians, most of whom are members of the Missouri Ophthalmological Society. Dr. David D. Donaldson, of the Harvard Medical School faculty, will speak, also.

A special feature of the conference will be two workshop sessions to be held in the Eye Clinic at the Medical Center. Because of limited space in this Clinic, registration must be held to 50, and physicians who wish to attend are urged to write promptly for reservations.

The first of the clinic sessions will be devoted to examination technics and tests for glaucoma. Practical ophthalmoscopy will be discussed and demonstrated in the second of the clinics. The entire conference program is designed to familiarize non-ophthalmologists with the practical elements of a general ophthalmologic examination, diagnosis and treatment program which may be helpful in their day-to-day practice.

Requests for reservations, or additional information concerning this and other postgraduate programs, should be directed to Gail Bank, Executive Director, Postgraduate Medical Education, M-176, at the Medical Center, Columbia.

Iowa Association of Medical Assistants

8th Annual Convention
Roosevelt Hotel Cedar Rapids, Iowa
May 15-17, 1964

Friday, May 15

6:30-10:00 p.m. Reception—"Welcome to Cedar Rapids"—Linn County Association of Medical Assistants

Saturday, May 16

8:00 a.m. House of Delegates

10:00 a.m. General Assembly

10:30 a.m. "IMAGE AND REALITY"
"Standing on the Corner, Watching All the Girls Go By"—Dr. Wm. D. Coder, Director of Conferences and Institutes, State University of Iowa; Member of AAMA Certifying Board.
"What AAMA Offers You"—Mrs. Stella Thurnau, Executive Secy., AAMA.
"My Eyes Have Seen"—Frank R. Peterson, M.D., Cedar Rapids, Iowa, Director of Medical Education, St. Luke's and Mercy Hospitals.

12:15 noon Luncheon
"The Plimsoll Line"—Jean Arnold, M.D. Coralville, Iowa. Diplomate, American Board of Psychiatry and Neurology.

2:30 p.m. "FOCUS ON THE FUTURE"
Mr. John Chehak, Medical Arts Surgical Supply, Cedar Rapids
Mr. Jerry Hampton, Controlofax and Thermofax, Cedar Rapids
Mr. M. A. Pope, Northwestern Bell Telephone Co., Cedar Rapids
Moderator—Mrs. Geraldine M. Smith, Iowa City

6:30 p.m. "THE GAY NINETIES"
Dinner and entertainment in atmosphere

Sunday, May 17

9:00-1045 a.m. "THE PRICE OF IGNORANCE AND DELAY"
Panel, courtesy Iowa Medical Society
"Medical Aid to Aged"
"Old Age Assistance"
"Medicare"
"Blue Cross/Blue Shield"
"Private Insurance"
"Structure and Functions of Iowa Medical Society"

11:00 a.m. Brunch

12:00 noon Installation of Officers

1:00-2:00 p.m. IAMA Post-convention Board Meeting

All medical assistants are welcome to attend our annual meeting.

Hotel reservations are to be made directly with the Roosevelt Hotel, Cedar Rapids, Iowa.

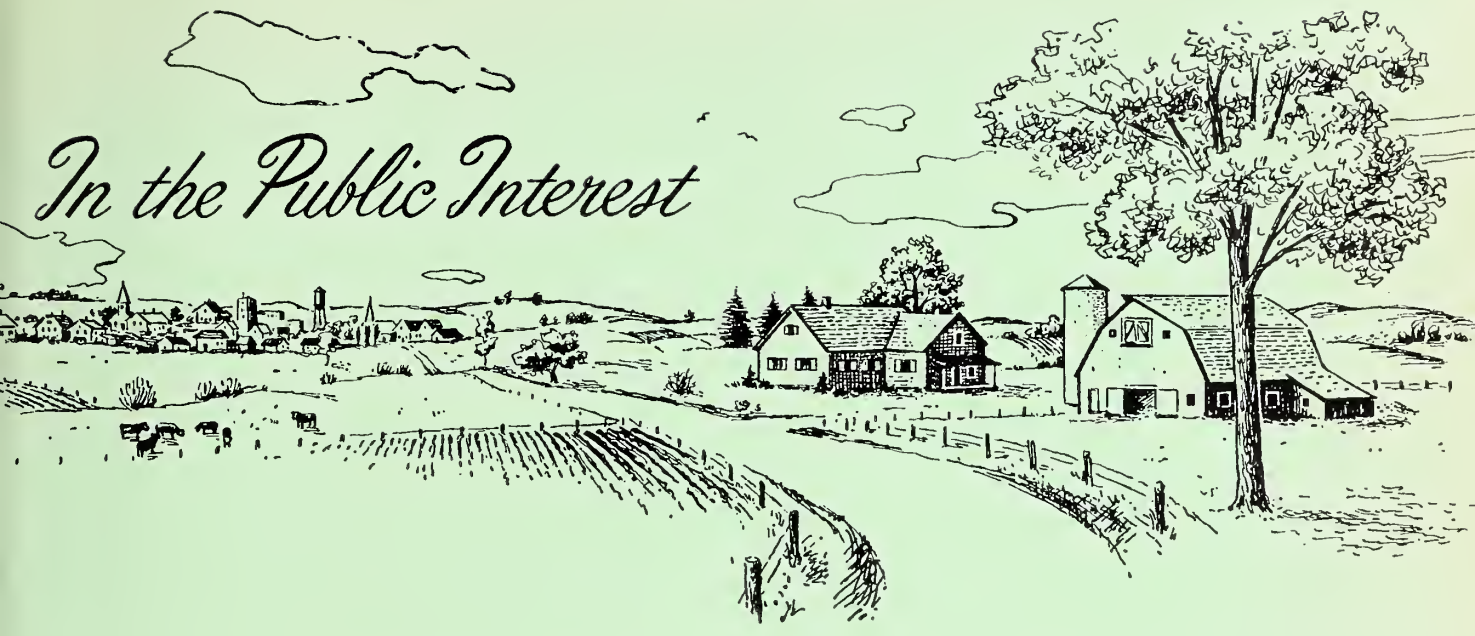
Registration for the annual meeting is $13.00 which includes the reception Friday evening, luncheon Saturday, dinner Saturday, Sunday Brunch, and all business and educational sessions and installations of officers. Mail registration and fee to Mrs. Jean Kinsey, 1021 3rd Ave. S. E., Cedar Rapids, Ia.

HELEN G. HUGHES

Government Medicine, and the "Vanishing American"

Perhaps the reason the American Indian is vanishing is that his medical, dental, and hospital care is provided by the Federal Government. According to a story that appeared in the February 17 CHICAGO TRIBUNE, American Indians have the highest disease rates and the lowest life span of any major segment of the U. S. population. Yet free medical, dental, and hospital care is provided to the 340,000 Indians living as wards of the Federal Government on the 250 Federal reservations in 23 states. The report indicated that the average life span for the government-cared-for Indian is 43 years, compared with 63 years for the American people as a whole. The infant mortality rate is 25 per thousand live births for the general population and 43 per thousand live births on the Indian reservations. Indians have four times as high a death rate from tuberculosis; three times as high a death rate from influenza and pneumonia; eight times as high from hepatitis; ten times as high from strep throat; twenty times as high from meningitis; and 100 times as high from dysentery. To some observers, in view of the Indians' plight, increased resistance to placing our aged population under a government medical scheme is not surprising.

AMA Council on Legislative Activities



It Is Vital for All Member Physicians to Attend

The Annual Meeting of the Iowa Medical Society

The annual meeting of the Iowa Medical Society, which is to take place for the 114th time, April 26-29, 1964, in Des Moines, will benefit not only the thousand doctors who attend it, but the rest of the population of the state as well. The benefits are of various sorts, and they accrue in many different ways.

SCIENTIFIC SESSIONS

Primarily, of course, the IMS annual meeting enables member physicians to hear lectures by prominent medical authorities regarding new or recently improved methods of diagnosing and treating their patients' ailments. At this year's program, for example, the doctors will hear a prominent Detroit psychiatrist, Dr. Garfield Tourney, speak about emotional depressions that are especially difficult to recognize and which may either interfere with a patient's recovery from a physical illness or may lead him or her to attempt suicide. From several addresses and panel discussions, they will learn the latest technics in treating ulcers. These presentations will be made by Dr. Robert L. Goodale, of Minneapolis; Dr. C. Allen Good, of Rochester, Minnesota; Dr. W. Turner Bynum, of Oklahoma City; and Dr. Stanley O. Hoerr, of Cleveland. Dr. William R. Hamsa, of Omaha, will describe his technics in managing fractures of the ankle.

A few years ago, the scientific sessions at each IMS annual meeting were more numerous than they have been more recently and will be this year. Indeed they paralleled one another in many instances. Attempts were made to provide a half-day program, at least every second or third year, for each of the specialty groups. But the specialties are numerous—their number, in fact, has been growing—and parallel scheduling prevented doctors from hearing all of the lectures that promised to be of interest to them. By means of the present plan, advances in each of several specialties are reviewed so that physicians in virtually unrelated types of practice can learn of the sorts of assistance they can now get from one another, on behalf of their patients. Paradoxically, under this arrangement, doctors attending the IMS annual meeting are often especially anxious to hear the speakers who are expert in fields other than their own.

Monday evening, during each annual meeting of the IMS, is reserved for gatherings of specialty groups, at which the organizations choose their officers for the coming year and discuss problems related to their individual types of practice. At other times of the year, and more often than not in Iowa City, the specialty groups offer short courses for their members and for the other Iowa physicians who wish to attend.

SOCIAL AND ECONOMIC TOPICS

Nowadays, two major functions of the State Medical Society are to keep its members informed about current social and economic topics, and to encourage their participation in civic activities at local, state and national levels. Thus, prominent speakers are engaged to discuss the business aspects of medical practice, and current or pro-

posed governmental programs involving health care. At the Hotel Fort Des Moines, on Monday, April 27, Dr. R. E. Carter, who has been director of the general-practice residency training program at Broadlawns-Polk County Hospital and is now to be in charge of postgraduate education at the S.U.I. College of Medicine, will speak on "Training Medical Students for General Practice," Dr. Francis L. Land, of Fort Wayne, will discuss "Recruitment and Education for the Most Needed Physician," Mr. Charles Gavin, director of admissions at Carleton College, will speak on "Preparing for, Entering and Staying in College," Hon. John G. Tower, U. S. Senator from Texas, will report on "The State of the Union," Mr. Harold J. Marshall, a New York banker, will talk on "Stitching Money Together," and Mr. Bob Considine, a noted newspaper columnist, will make a presentation entitled "Rx for a Free Press." On Tuesday, April 28, the closing address, by Dr. Elmer M. Smith, medical consultant to the State Board of Social Welfare, will concern "Medical Aid for the Aged in Iowa."

A principal purpose of each IMS annual meeting is to reenforce each Iowa doctor's determination to keep abreast of all that is new in medicine, and indeed to contribute frequently and significantly to medical progress. The exhibits help to do this. The so-called "technical" exhibits consist of booths erected by pharmaceutical manufacturers and other commercial firms in the hallways adjoining the meeting room at Hotel Fort Des Moines, where doctors can see new medications, office and hospital equipment, instruments and textbooks, and can talk them over with the "detail men" whom the companies have sent to staff the exhibits. For the opportunity of thus presenting their products and services, the drug makers and other merchants pay fees to the Society which help considerably to defray the costs of the annual meeting.

The "scientific" exhibits differ from the "technical" ones chiefly in their lack of connection with the profit motive. The exhibitors, in this instance, are governmental agencies such as the S.U.I. College of Medicine and the State Department of Health; national health organizations such as the National Foundation and the American Cancer Society; paramedical groups such as the American Physical Therapy Association and the American Association of Medical Assistants; and an occasional individual physician. The topics with which they deal are technics in case-finding, and the sorts of cooperation that doctors can advantageously seek from, or extend to, people who are concerned with health care but are outside the ranks of private medical practitioners. At the Fort Des Moines Hotel, it is necessary to position the scientific exhibits on the floor above that of the meeting hall, but doctors will find it worth their while to find and inspect them carefully.

THE IMS HOUSE OF DELEGATES— OPEN TO ALL MEMBERS

The major governing body of the Iowa Medical Society, its House of Delegates, consists of slightly under 150 physicians chosen by the county medical societies in nearly strict proportion to their memberships. It meets first on Sunday, the first day of the annual meeting, and then for a second time on Wednesday, both times at the Savery Hotel. All members of the IMS—including those who are neither delegates nor alternates—are urged to attend.

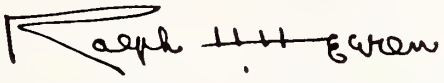
The House of Delegates receives reports and recommendations from its officers and from the Society's 40 or more committees and councils, and receives resolutions from county medical societies, during its Sunday session. Because the subsidiary groups have been researching and discussing their respective problems throughout the year, the proposals they offer are never spur-of-the-moment ideas, and the House of Delegates never merely "rubber stamps" them. The reports and resolutions are sent to reference committees, and the reference committees hold hearings Sunday afternoon, at which interested members of the Society have opportunities to express their views on all of the topics. Finally, at the Wednesday session, after electing officers for the Society to serve throughout the coming 12 months, the House of Delegates considers and acts upon the reports of its reference committees.

At this year's sessions of the IMS House of Delegates, numerous suggestions relating to Blue Shield will be proposed, plans for the erection of a new headquarters building for the Society will be made somewhat more specific than they were last year, and other vital matters will be brought up.

SUMMARY

For all of these reasons, the annual meeting of the Iowa Medical Society is a gathering that every doctor of medicine in the state should make an effort to attend, and it is a gathering in which the people of the state have a greater stake than they perhaps have realized. It brings doctors information about medical methods that either they or their colleagues can use in helping their patients; it stimulates them to engage in research, to read medical texts and articles, and to attend short courses; and it helps them to learn about new prescription drugs, and about the projects of governmental agencies and national health organizations. Most importantly, the annual meeting is the doctors' principal opportunity to share in establishing the policies to be pursued by their state medical society and by organized medicine as a whole.

STATE DEPARTMENT OF HEALTH



RALPH H. HEEREN, M.D., ACTING COMMISSIONER

Morbidity Report for Month of February, 1964

Diseases	1964 Feb.	1964 Jan.	1963 Feb.	Most Cases From These Reported Counties
Diphtheria	0	0	0	
Scarlet fever	600	351	458	Clinton, Dubuque, Hancock, Jackson, Jefferson, Johnson
Typhoid fever	2	0	1	Scott
Smallpox	0	0	0	
Measles	198	89	1308	Harrison, Polk, Scott
Whooping cough	11	3	29	Marion, Polk
Brucellosis	12	7	17	Hardin, Scott
Chickenpox	631	264	1023	Des Moines, Dubuque, Marion, Polk, Pottawattamie
Meningococcic meningitis	1	0	0	Scott
Mumps	1802	1126	303	Crawford, Dubuque, Fremont, Marion, Polk, Scott, Union
Poliomyelitis	0	0	0	
Infectious hepatitis	55	29	39	Plymouth, Polk, Tama
Rabies in animals	38	28	21	Benton, Henry, Iowa, Jasper, Polk, Story, Washington
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	33	35	21	For the State
Syphilis	105	66	59	For the State
Gonorrhea	195	91	92	For the State
Histoplasmosis	6	1	2	Cass, Cerro Gordo, Johnson, Linn, Polk, Scott
Food intoxication	0	0	0	
Meningitis (type unspecified)	7	0	2	Cherokee, Clinton, Louisa, Montgomery, Pocahontas, Poweshiek, Wapello
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	0	
Salmonellosis	9	8	13	Benton, Black Hawk, Crawford, Linn, Polk, Wapello
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	0	0	Washington
H. influenzal meningitis	1	1	0	Polk
Amebiasis	2	1	0	Boone
Shigellosis	3	1	2	Black Hawk, Union
Influenza	306	177	9	Polk

Attention: Iowa Travelers

The Iowa State Department of Health has received from the U. S. Public Health Service the following memorandum regarding international vaccination requirements:

"Every day scores of persons arriving in the United States—American citizens as well as visitors from distant lands—run into delays in quarantine. The reason: they fail to present a valid international certificate of vaccination against smallpox.

"In the United States the certificate is published as Public Health Service Form 731, 'International Certificates of Vaccination,' revised June 1961. The form is distributed with the passport application, or it may be obtained from local or state health departments or from facilities of the U. S. Public Health Service.

"To be valid the certificates must be completed in all respects, including the following items:

Name of the person vaccinated or revaccinated
His signature (a parent may write in a child's signature)
Sex
Date of birth
Date of vaccination or revaccination
Record of either:
  Primary vaccination, read as successful, or
  Revaccination
Written signature of the vaccinating physician, even though his nurse or technician may have given the vaccination
The approved stamp of the health department of the area in which the vaccinating physician practices

"Smallpox vaccination is required of all persons entering the United States. Cholera and yellow fever vaccination is required of persons arriving from infected areas."

Your own physician can give any of the vaccinations required for travel except yellow fever vaccination. This can be given only at an approved yellow fever immunization center. For the convenience of Iowans, we have helped to establish such a center at Iowa City. Persons who wish to go there to have the yellow fever immunization must call or write in advance to the Student Health Service, University Hospitals, Iowa City, Iowa. Iowans who find it would be difficult to go to Iowa City for the yellow fever vaccination, may write or call the State Department of Health, Division of Preventable Diseases for other stations where the vaccine is given.

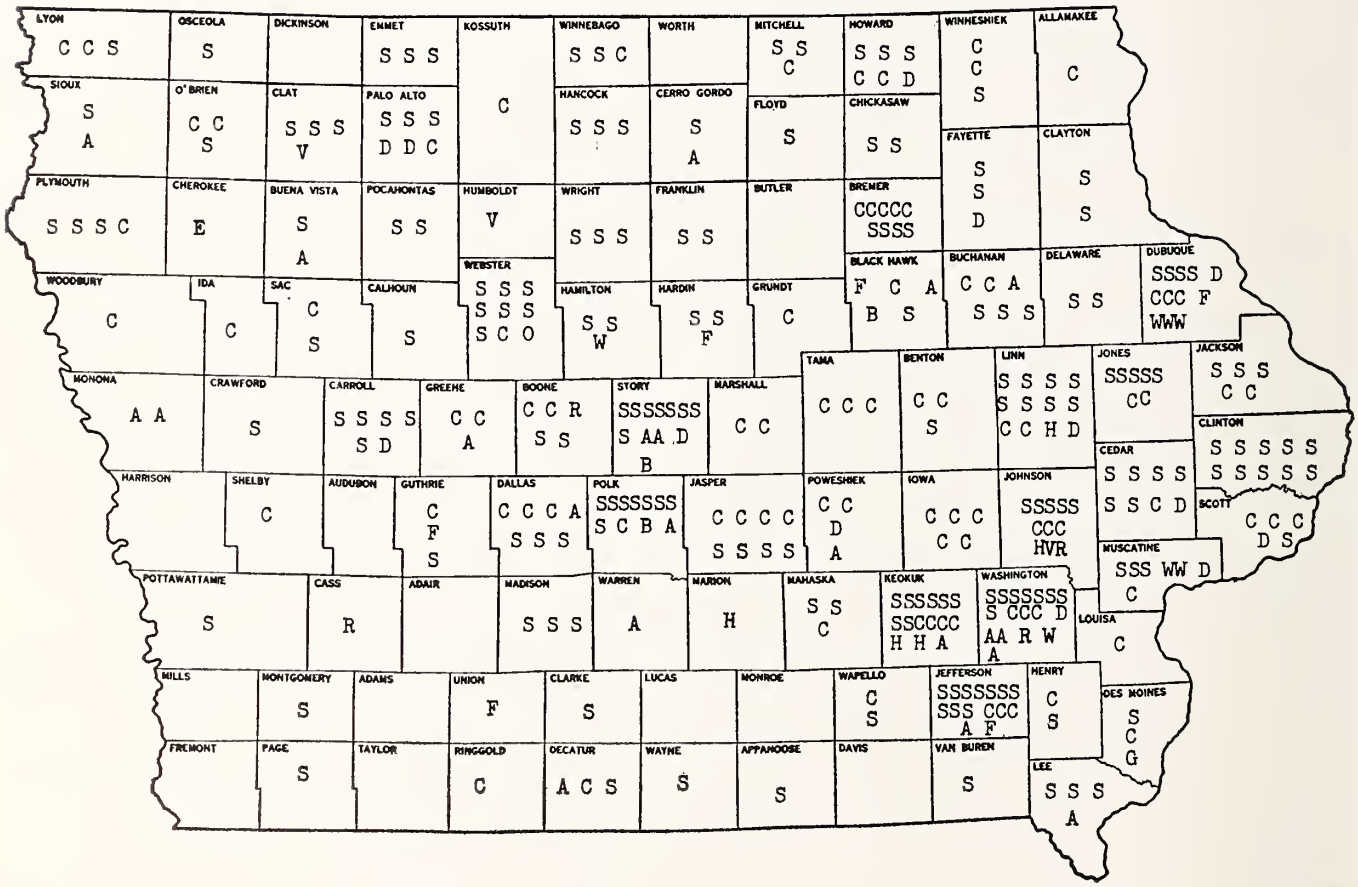
As a reminder that smallpox vaccination is definitely required, we are quoting part of another recent report from the U. S. Public Health Service:

"A Federal District Court recently upheld the authority of the Public Health Service to place in isolation an international traveler suspected of being a smallpox carrier. It was the first such legal case in the Service's history.

"The traveler was a 69-year-old American woman who arrived in New York by air from Stockholm, Sweden, which was in the midst of a smallpox outbreak. She was placed in isolation at the Public Health Service Hospital in Staten Island, New York, because she did not have a valid international certificate of vaccination and because, by her own admission, she had not been successfully vaccinated since childhood. (She was vaccinated by a Public Health Service officer at time of arrival and subsequently developed a 'good take,' which showed that her level of immunity had been low.)"

RABIES IN ANIMALS, IOWA, 1963

County Distribution by Species of Reported Cases*



	Cases
S—skunk	189
C—cattle	89
A—cat	21
D—dog	13
W—swine	7
F—fox	6
H—Horse	5

	Cases
R—racoon	4
B—bat	3
V—civet cat	3
G—groundhog	1
E—badger	1
O—opossum	1
Total	343

* All cases confirmed by laboratory examination.

Report on the Refresher Course for the General Practitioner

EUGENE SMITH, M.D.

The Postgraduate Conference as presented by the Faculty of the College of Medicine of the State University of Iowa in February, achieved a Refresher Course which was definitely a re-invigoration for the 220 doctors in attendance. The Conference was enthusiastically opened with remarks by Dean Robert Hardin of the College of Medicine and by Dr. William Castles, president of the Iowa Chapter of the American Academy of General Practice. Dr. John A. Gius, director of postgraduate studies, took over as master of ceremonies.

Every phase of the most prevalent problems of the practice of The Art and Science of Medicine was unfolded in a most dramatic manner. The use of TV reached a new high when the visiting physicians were enabled to view a number of surgical procedures at the same time, switching from one to another, asking questions and hearing discourses on the case histories. One most timely operation was for lung cancer. With the x-rays in view, the chest was opened and the lesion exposed. Simultaneously with the pathology report, the specimen was passed around. The extent to which closed circuit TV can utilize the vast amount of clinical material for teaching purposes at our University Hospital is unlimited.

Cigarette smoking, by the way, was noticeable by its absence. Even the doctors are getting the word and are responding to it.

The use of eight-millimeter movie film clips or cartridges, each lasting 15 minutes, was demonstrated by Dr. John Gius. A library of these cartridge films could be very valuable.

Another highlight of the Conference dealt with the legal responsibilities of the physician. The evening meeting was presided over by Dr. Carroll B. Larson, and Dean Mason Ladd and Professor Samuel M. Farr, of the College of Law, as panel members, engaged in a most interesting and erudite discussion of law and medicine.

The main papers represented a wide range of subjects, and the doctors attending the meeting could choose among six, or could move from one to another to hear one presentation each in four different specialists. The use by the Psychiatry Department of an insulated room to interview and treat psychotics, or other patients, was outstanding. As far as the patient knew, the "stage" was the doctor's private office, for the patient could not see through the one-way glass, hiding the 200 doctors who were watching the interview. The conversation between patient and the interviewing doctor was easily heard by the audience because it was amplified. In this set-up a normal patient, child or adult, who has difficulty in being natural in front of an audience, behaves altogether naturally.

Dr. Christian E. Radcliffe, in his fascinating talk on skin conditions, reminded his old students that there still are patients with Triple P complex.

Meticulous care and thought had been used in making the titles of the papers inviting. For example rather than label the round table discussion "Ob & Gyn Problems" Dr. William C. Keettel called it "Now, What Do I Do?" Dr. James C. Taylor gave his talk the title "The Child Looks Pale," which I preferred to "The Anemic Child." Dr. Albert S. Norris gave a very informative and entertaining talk under the title of "The Tired-Mother Syndrome," weaving in some home-spun domestic philosophy and also touching on "The Tired Physician Syndrome." Dr. Edward Townsend, a pediatrician of note from Rochester, New York, was well received. He reported on the advantages of having a trained, experienced psychiatric social worker in his office.

The frosting on the cake was the social hour (oysters on the half shell and beer) hosted by Marion Laboratories, followed by a dinner at the Elks Club, at which the sophomore and junior medical students and the participating faculty were guests of the Iowa Chapter. The speaker of the evening was Mr. Emmett F. Butler, of the Maytag Company, at Newton, who gave a most enjoyable talk entitled "Your Public Relations Are Showing."

In order that the greatest good be distributed to the greatest number through this Annual Conference, I have a suggestion to make to Dr. Robert Hardin, dean of the College of Medicine and to Dr. John A. Gius, director of postgraduate studies; i.e. that they entitle this Conference "The Re-invigoration Course in Science, Art and Philosophy of Medical Practice"; and that although this Conference is co-sponsored by the Iowa Chapter of the

AAGP, the impression should not be given that doctors who limit themselves to one phase of practice are not welcome. The specialists also would enjoy the program and derive much benefit from it for the treatment of their patients, for as doctors, all of us care for man, the sum of all the parts.

As the meeting closed, doctors were heard to remark, "This is one meeting each year that I must not miss!"

Iowa Thoracic Society

Ralph E. Smiley, M.D., Mason City, president of the Iowa Thoracic Society, invites all Iowa physicians to attend the hospitality hour, dinner and medical program of the organization's annual meeting, at Hotel Savery, Des Moines, on Wednesday, April 8. The business meeting and election of officers and executive committee members will be held from 4 to 5:30 p.m. The hospitality hour will follow the business meeting, and a smorgasbord dinner will be served at 6:30. Spouses are invited. The medical program will begin at 7:30.

In a panel discussion on "Pulmonary Problems Encountered by a Thoracic Surgeon, a General Internist and a Chest Physician" the following physicians will participate: Alexander Matthews, M.D., James E. Kelsey, M.D., and Leon J. Galinsky, M.D., all of Des Moines.

"Respiratory Problems in Immobile Patients" will be discussed by William K. Hamilton, M.D., professor and chairman, Department of Anesthesiology, State University of Iowa College of Medicine, Iowa City.

The chairman of the Program Committee is David C. Funk, M.D., Iowa City. Others on the Committee are Ian Maclean Smith, M.D., Iowa City, and Dr. Galinsky. Dinner reservations should be sent to the Iowa Thoracic Society, 1818 High Street, Des Moines, Iowa 50309.

Smallpox Increases; Immunity Declines

Smallpox is on the increase overseas at the same time that the level of immunity in the United States appears to be shrinking, the American Medical Association warned on October 18. Unless these trends are reversed, smallpox may again spread within this country, warned Raymond L. White, M.D., Director of Environmental Medicine and Medical Services for the AMA.

Latest figures show smallpox up an average of 13 per cent in most areas of the world. But more significant, it has appeared in several countries long-free of the disease, such as Sweden, Dr. White said. The United States hasn't had a confirmed case since 1949, although there was a "scare" last year when a Canadian boy, with an incubating case, passed through New York.

"The absence of smallpox, while speaking well for disease prevention efforts, has led to complacency," Dr. White said. "A steady decline in immunity has left at least three-fourths of our population without adequate protection."

"The danger that smallpox will be brought in by an international traveler is ever present. One infected person could touch off a hundred cases before it's even known the disease is in the country," he pointed out. "Persons most likely to be exposed include the health professions and related personnel and the persons in the travel industry, including those persons who feed and house travelers."

Maintaining immunity to smallpox, he said, is a task requiring the combined efforts and understanding of both physicians and their patients. "Although many states require that a child be vaccinated prior to kindergarten or first grade, it is difficult to legislate immunity," he continued. "For one thing, children should be vaccinated as soon as possible—certainly long before they enter school. For another, immunity wears off and revaccination is necessary at least every five years."

"Routinely," Dr. White added, "patients should make sure of their immunity, and physicians should encourage such a course of action. Then there would never be cause for worry about the threat of a smallpox outbreak in this country. Indeed, through education, the time may yet come when this disease is eradicated throughout the world."

Johnson Budget Threatens Iowa Public-Health Work

Dr. Ralph H. Heeren, then acting commissioner of health for the State of Iowa, announced on February 15 that under President Johnson's budget Iowa would lose about $115,000 a year in federal grants. In particular, federal support for the tuberculosis-control program would be eliminated, clipping $25,000 or slightly more than 20 per cent from the moneys available for that purpose. The U. S. contribution has helped pay the salaries of three roving nurses who work in the program and the costs of the mobile x-ray service.

The number of new cases of TB reported each year is dwindling, Dr. Heeren said, and is now between 300 and 400. But there are about 2,500 known or suspected active cases in the state.

The present federal grant of $216,000 for general health services would be trimmed about one-third, or by $63,000 under the proposed budget. That money is now used to supplement the salaries of 26 county nurses and to maintain six regional offices of the State Department of Health, staffed by nurses, engineers and sanitarians. Grants for control of chronic illness would be cut by $27,000. "But we could absorb that," Dr. Heeren commented.

Local public health services are virtually nonexistent, except in a few largely urban counties, and the proposed reduction in federal aid to state departments of health for such purposes would come at just the time (July 1, 1964) when Iowa is planning to start remedying such deficiencies.

Woman's Auxiliary News

On Not Being a Lumpenwähler

Women, according to Mr. Richard Scammon, director of the Bureau of Census and chairman of the Commission on Registration and Voter Participation, constitute the majority of a group he calls "lumpenwählers."

In the United States today there are 3.6 million more eligible women voters than men, and should the female voting population ever cast their ballots for a single candidate, they could control an election. Unfortunately, women make a poor showing at the polls. In the 1960 Presidential election, 22½ million women failed to vote, and in off-year elections the majority of those who fail to participate in the decision-making of democracy by going to the polls to mark a ballot or pull a lever are, by a wide margin, women.

According to Mr. Scammon, potential voters who skip their chance to vote because they lack interest, lack caring, or "just don't give a darn" are examples of lumpenwähler, or to use an unladylike expression, they are electoral bums. These are the citizens who are not interested enough in public affairs and their own future to have ideas about the issues, and having no interest or ideas they are counted in the "no opinion" column of the public-opinion polls.

At the primary elections in June and the Presidential election in November, women have a wonderful opportunity to upset Mr. Scammon's statistics. Newspaper and television coverages provide ample opportunities for us to study national issues and candidates. A few minutes' conversation with local candidates will provide us their stands on the issues, and also an opportunity for us to make our views known to them.

Remember, politics begins in the community—for politics is simply an extension of community action. Political power flows from the bottom up; today's candidate for a small local office may well be tomorrow's candidate for a state legislative or executive office. The distribution of political power is complex, fascinating, and in a constant state of flux. Dig beneath the surface! The answers may not be so simple as you think, and they may affect you far more than you thought possible. Find out what your neighbors are thinking on political issues—and why.

Now is a good time to check on voter registration for all eligible members of your family. Don't forget sons or daughters away at school or in the service, if they are old enough. They can vote by absentee ballot. Volunteer for regular party work, and advance your knowledge of politics by on-the-job experience. Physicians' wives can help fill the partial vacuum created by the apathy of so many American women, and in the process they can make their influence felt quickly and strongly.

Mr. Scammon, we can't speak for all the females, but physicians' wives definitely won't continue to be lumpenwählers.

JANET ELLIS



The National Auxiliary's representative at the Iowa Auxiliary's annual meeting will be Mrs. Richard A. Sutter, of St. Louis, regional vice-president for the north central region. She was president of the Missouri Auxiliary in 1952-1953, and has served the National Auxiliary as regional chairman and later as chairman of Mental Health.

She is a graduate of Washington University, St. Louis, where she majored in economics; her husband is a specialist in occupational medicine; and she and Dr. Sutter have three grown children. In 1961 the St. Louis Globe-Democrat named her a "Woman of Achievement" for her work with local hospitals and with civic and health organizations. For recreation, she and Dr. Sutter cruise the mid-continent rivers and the Great Lakes in their 40-foot cruiser.

Wanted

The name and address of an elderly person who needed and sought hospital care, but who was denied it because of inability to pay.

Republican Senator Thomas Curtis asked the King-Anderson Bill's proponents to produce such a person in 1961. So far, no names have been supplied.

Always remember, the real issue is not health care for elderly people. On this front, we are all united. M.D.'s are more concerned about their care than are politicians! The only issue is: Should we have a voluntary program, or a compulsory scheme financed by higher taxes?

COUNTY AUXILIARIES

Des Moines County

Members of the Des Moines County Medical Auxiliary were hostesses at a February party of Senior Citizens, Inc., sponsored by Altrusa Club at the Senior Citizens' Center in the Union Hotel, Burlington. Hostesses were Mesdames Robert H. Crawford, Jesse L. Saar, John F. Sulzbach, Walter M. Friday and Robert B. Allen.

Mrs. Walter Friday led the group singing, and George Washington's birthday was observed in an audience participation program.

Grundy County

At the March meeting of the Grundy County Medical Auxiliary, Mrs. Rue Nicklaus, director of special education for Grundy County, was guest speaker. The group was amazed to learn of the number of handicapped and mentally retarded children benefited by the classes conducted in the various towns. The Grundy County Auxiliary's object is to assist in this work wherever it is feasible.

Johnson County

Dr. R. D. Liechty, of the Department of Surgery at University Hospitals, was guest speaker at a recent meeting of the Woman's Auxiliary to the Johnson County Medical Society. The event was held in the doctors' conference room at Mercy Hospital, with a short business meeting conducted by the president.

Pottawattamie County

Members of the Pottawattamie County Medical Auxiliary sponsored a benefit dessert card party at the new Club 64 on February 27.

The proceeds were divided equally between the Visiting Nurses Association and the American Medical Association Education and Research Foundation. The funds earmarked for the V. N. A. purchased a blood-pressure machine and a stethoscope which were badly needed by that group. They were presented on March 7 by Mrs. Isaac Sternhill.

One hundred sixty women had a delightful day to drive to the country for the party. At the close of the afternoon, the 10 door prizes (topped by a flower-bedecked spring hat) were greeted with delight by the recipients.

Mrs. Elmer Bean, the Auxiliary president, was assisted by the following committee: Mesdames George Pester, Isaac Sternhill, Emmett Mathiasen, Ralph Moe, Rudolph Selo, W. Clark Giles, Ralph Hopp, Lloyd Smith and Max Olsen.

Worth County

The Woman's Auxiliary to the Worth County Medical Society met on January 25 and elected the following officers: president, Mrs. M. P. Allison; vice-president, Mrs. W. G. McAllister; secretary-treasurer, Mrs. B. H. Osten. Committee chairmen have been appointed to carry out projects applicable in the community.

Prior to the meeting, the women were entertained by the Medical Society at a 6:30 dinner at Costa's, in Mason City. After each group had conducted a business meeting, the remainder of the evening was devoted to dancing.

1964 ANNUAL MEETING

Plan now to attend the 36th annual meeting of the Woman's Auxiliary to the Iowa Medical Society, in Des Moines, April 27-28. Details of the program appeared in the March issue of this publication.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

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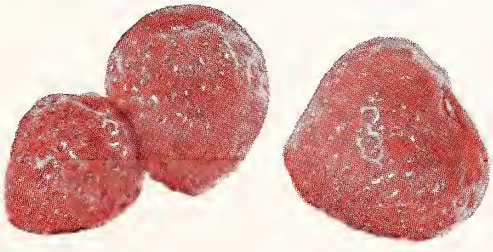
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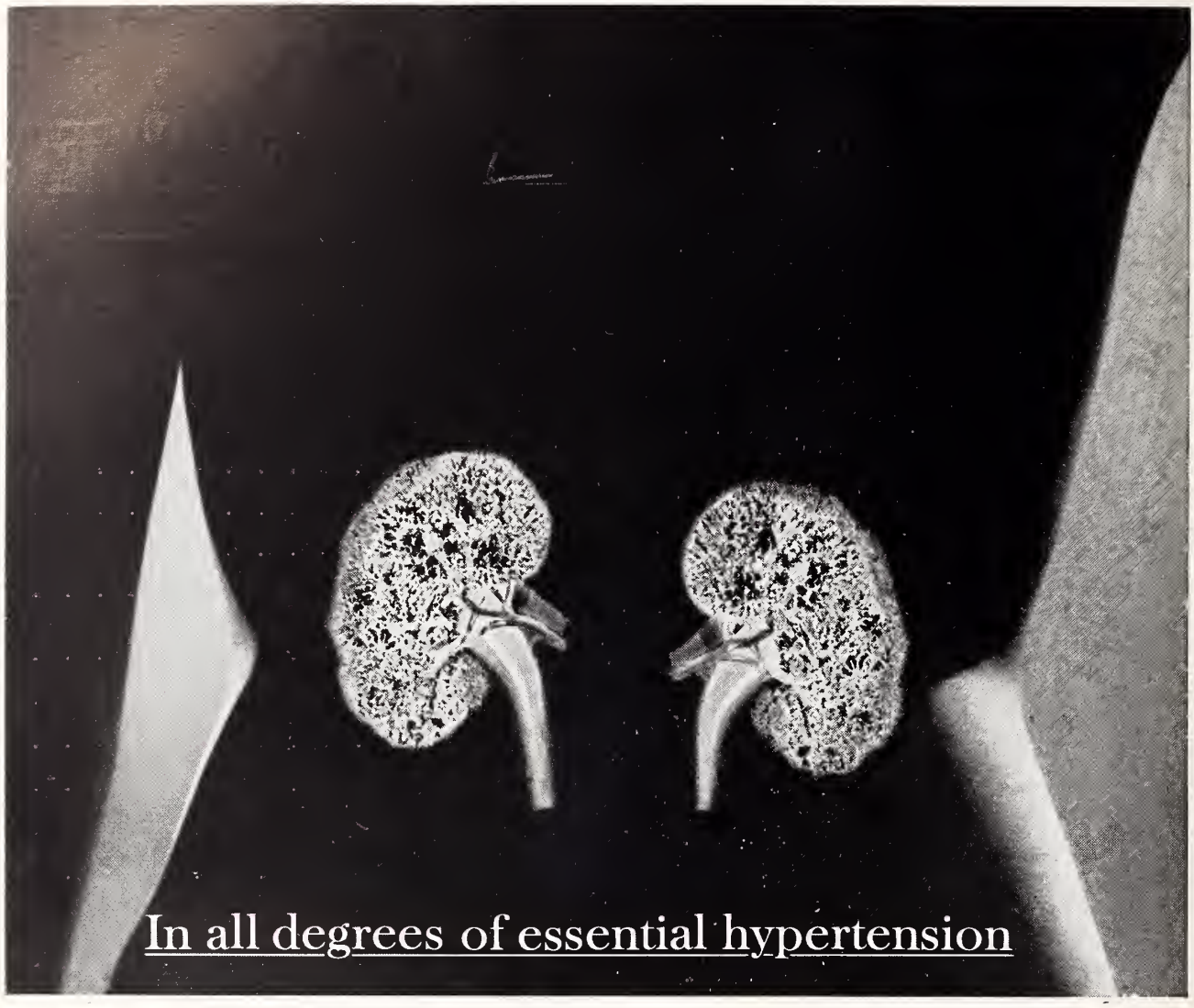
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RAUTRAX®-N RAUWOLFIA SERPENTINA WHOLE ROOT (50 MG.), BENDROFLUMETHIAZIDE (4 MG.) WITH POTASSIUM CHLORIDE (400 MG.), SQUIBB

Lee Forrest Hill, M.D.

1894–

Dr. Lee Forrest Hill was born in West Rumney, New Hampshire, February 8, 1894. He graduated from Dartmouth College in 1917 and from Harvard Medical School in 1920. Following an internship and a residency in Boston, he moved to Des Moines, where he has practiced pediatrics ever since.

He is a charter member and a past-president of the American Academy of Pediatrics; was one of the organizers of the American Board of Pediatrics; and was its secretary from 1947 to 1957, when he became its president. He is a member of the American Pediatric Society, and of the Polk County and Iowa Medical Societies, an honorary member of Alpha Omega Alpha, and a clinical professor of pediatrics at the College of Medicine, State University of Iowa. He was chief of the pediatric staff of Raymond Blank Memorial Hospital for Children, in Des Moines, from its establishment in 1943 until 1964, and is now director of pediatric education there. He served as editor of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY from 1937 to 1945, and was vice-president of the Iowa Medical Society in 1963.

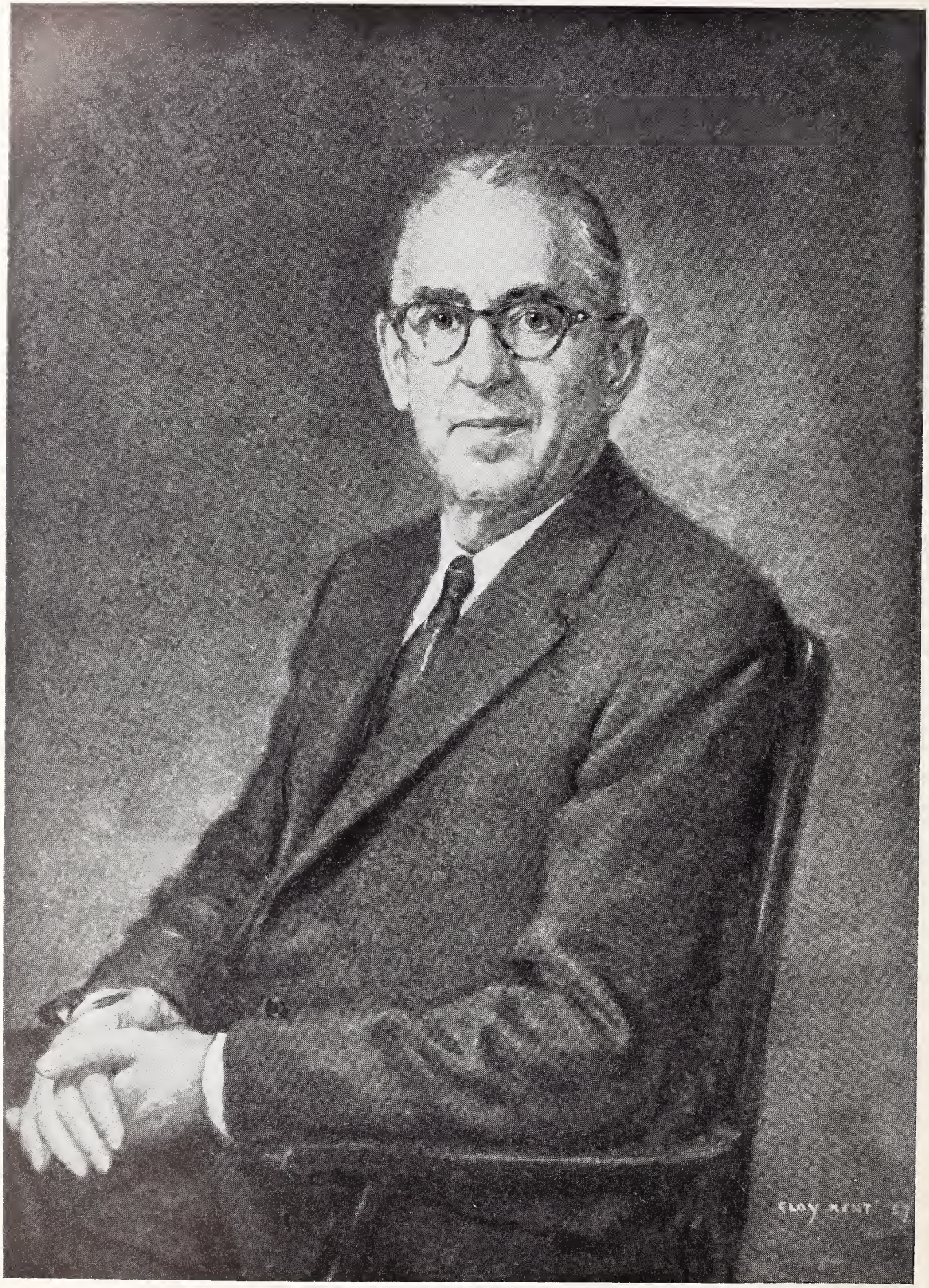
As chief of the pediatric staff of the Raymond Blank Memorial Hospital for Children, Dr. Hill developed a teaching program in pediatrics that was approved for residency training by the Council on Medical Education and Hospitals of the American Medical Association in 1946. Since that time, 60 physicians have received their pediatric training under his supervision. The articles in this issue of the JOURNAL have been contributed by some of his former pupils, in appreciation of his work.

In 1957, many of his former residents returned to Des Moines to honor him at a two-day scientific meeting attended by leading pediatricians of the country. The meeting proved so successful that it has now become an annual affair, and is widely attended by pediatricians not only from Iowa but from surrounding states. It has become the focal point of meetings for Iowa pediatric groups, and its scientific programs have been outstanding.

Dr. Hill's contributions to pediatrics and pediatric education have been great. He has published many articles, one book (in cooperation with Gladys Denny Schultz), and is author of the chapter on Infant Feeding in the revised edition of Brenneman's SYSTEM OF PEDIATRICS. He has served on the Advisory Commission of the United States Children's Bureau since 1948. In addition, during his years as editor of the JOURNAL he demonstrated his awareness of the many problems affecting medicine in general and dealt with them through its pages. The development and use of new drugs, World War II, with its need for medical preparedness and enlistment of medical personnel, the start of Blue Cross and later Blue Shield in Iowa, the always-present threat of socialized medicine—all of these received his attention and were presented through the medium of the JOURNAL.

Not the least among his efforts to advance pediatric practice in Iowa was his assistance in the establishment of the Raymond Blank Hospital Guild. Through the years, the Guild's members have increased from a devoted few to a great number, many of them drawn from other counties of the state. The Raymond Blank Memorial Hospital has been recognized as a center where the best of pediatric care may be obtained, and its patients come from a wide area around Des Moines.

Throughout the country as well as in Iowa, Lee Forrest Hill is affectionately recognized as "Chief of Pediatrics."



LEE FORREST HILL, M.D.

Scientific Articles

The Differential Diagnosis and Treatment of Short Stature at Adolescence

R. M. BLIZZARD, M.D.
Baltimore, Maryland

THERE ARE FEW PHYSICIANS who have not encountered an immediately preadolescent or adolescent child with short stature and sexual infantilism. Many physicians in this situation doubt their competence to determine whether an abnormality is present, or if they believe there is an abnormality, to determine the specific diagnosis.

The purpose of this paper is to assist these practitioners by reviewing the differential diagnosis in such patients, discussing the methods of diagnosing obscure causes of stunted growth, and considering the effectiveness of treatment in each entity considered.

THE CAUSES OF SHORT STATURE

In Table 1 the various causes of short stature in childhood are reviewed. A detailed discussion of each condition does not serve the purpose of this paper, for we are interested in considering only the entities of more obscure origin and those most difficult to diagnose. However, a few general comments are pertinent.

Skeletal defects usually are easy to diagnose because affected patients have unusual body and skeletal contours, a disproportion between the length of the extremities and that of the trunk, and typically abnormal x-ray findings. Structural or metabolic anomalies of the cardiac, renal and central-nervous systems are also relatively easy to diagnose when one has completed an adequate

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TABLE 1

CAUSES OF SHORT STATURE AND DWARFISM

I. BONE DISEASES
- A. Chondrodystrophy (Including Lipochondrodystrophy)
- B. Rickets, All Types
- C. Osteogenesis Imperfecta
- D. Diseases of the Spine (T.B.C., Hemi-Vertebra, etc.)

II. NUTRITIONAL OR METABOLIC DISEASES
- A. Celiac and Fibrocystic Disease of the Pancreas
- B. Renal Acidosis of Any Origin
- C. Hepatic Insufficiency
- D. Nutritional Defects Secondary to Chronic Infection

III. CIRCULATORY DISORDERS WITH ANOXEMIA
- A. Congenital Malformations of the Heart
- B. Extensive Chronic Pulmonary Disease

IV. DELAYED ADOLESCENCE WITH RETARDED GROWTH SPURT

V. PRIMORDIAL OR GENETIC DWARFISM
- A. Familial Short Stature
- B. Sporadic Without Congenital Anomalies
- C. Dwarfism With Progeria
- D. Dwarfism With Craniofacial Anomalies
- E. Dwarfism With Severe Brain Defects

VI. CHROMOSOMAL ABNORMALITIES
- A. Trisomy Syndromes (e.g. Mongolism)
- B. Gonadal Agenesis With Dwarfism

VII. ENDOCRINE DISTURBANCES
- A. Hypothyroidism
- B. Hypopituitarism
- C. Sexual Precocity With Early Epiphyseal Fusion
- D. Addison's Disease

history and physical examination, an EKG, a urinalysis and a serum urea nitrogen measurement. Disturbances of calcium and phosphorus ordinarily can be diagnosed when a complete history and physical examination have been done and the serum calcium and phosphorus have been determined. Celiac and fibrocystic disease characteristically produce symptoms at an early age, thus permitting differentiation between them and the other entities to be considered. Determining any of the remaining causes of short stature is much more difficult. This is particularly true in the immediately pre-adolescent age group. The remainder of this paper will deal with these more obscure entities.

RELATIVE INCIDENCE OF THE ENDOCRINE-RELATED CAUSES OF SHORT STATURE

It is quite apparent from the data in Table 2 that the commonest cause of short stature and sexual infantilism in the adolescent is *constitutional delayed growth.* This entity is almost exclusively limited to boys, although occasionally one sees a female with delayed adolescence. The delayed growth, which was termed "delayed adolescence" by Wilkins,[1] actually precedes the adolescent age by several years. The typical male with this syndrome is the boy of 10 with the height of an average eight-year-old (height age, eight years) and a bone age of eight years. At the age of 12, his height age and bone age are 10 years. Linear and skeletal growth are consistent but delayed until the boy is 16 or 17, at which time his adolescent growth spurt takes place and his secondary sexual characteristics appear. This condition is often difficult to diagnose when the patient first presents, unless his measurements at various earlier ages are available. It can be seen from the data in Table 2 that this diagnosis sometimes cannot be made until the patient has been followed for a considerable period of time.

Primordial dwarfism accounted for abnormalities in 24 per cent of the patients referred to our clinic because of short stature. This incidence is probably falsely high in relation to the actual incidence of primordial dwarfism as a cause of short stature in the general population, since these patients are often referred to the University Center for diagnostic evaluation. Some of these individuals are dwarfed but otherwise normal in appearance. Others have a progeroid facies and habitus, or the small, pinched facies of the Cockayne-Neil type of bird-headed dwarfism. Metabolic or endocrine abnormalities cannot be demonstrated in these individuals.

Hypothyroidism is a much less common cause of short stature than is constitutional delayed growth. In our series of 709 patients, there were 74 with hypothyroidism who presented because of short stature.

Thirteen per cent of the patients presenting at our clinic with short stature were diagnosed as having *gonadal aplasia,* gonadal dysgenesis, or Turner's syndrome. All are phenotypical females, and many have associated congenital anomalies which will be discussed later. These individuals invariably have a sex-chromosome abnormality, the majority having 45 instead of 46 chromosomes and only one X chromosome. The remainder have an abnormal second X chromosome which is either exceedingly small or exceedingly large, or have mosaicism. In association with the anomalous sex chromosomes, gonads do not develop, and as a consequence the internal sexual ducts and the external genitalia are normal female. It should be recalled that differentiation along male lines is dependent upon the presence of androgens, primarily from the fetal testes.[2]

Sixty-seven of our patients had *hypopituitarism,* and 30 per cent of these had hypopituitarism secondary to a space-occupying lesion, usually a craniopharyngioma. The cause of idiopathic hypopituitarism is purely conjectural. Only rarely does this entity occur in families. Of the 67 patients listed, only two individuals were from the same family. These patients were brothers.

TABLE 2

TYPES AND INCIDENCE OF STUNTED GROWTH

		No.	Per Cent*
Constitutional Retarded Growth		219	31
Slow Growth and Retarded Bone Age (Too Young for Diagnosis)		87	12
Primordial Dwarfism	130		
(With Craniofacial Anomalies)	43	173	24
Hypothyroidism (Presenting Complaint Short Stature). Total Hypothroid Patients = 202		74	11
Gonadal Aplasia		89	13
Hypopituitarism			
Idiopathic	47		
Tumors	20	67	9
		709	100

* Approximation

THE APPROACH TO THE DIFFERENTIAL DIAGNOSIS

The aids obtained from the *history* are listed in Table 3. Hypothyroidism secondary to Hashimoto's thyroiditis and enzymatic deficiencies of thyroid hormone synthesis often occur in families. Athyreotic cretinism rarely occurs in families. Therefore, the *family history* may help the physician in differentiating these conditions. In cases of constitutional delay, one often obtains the history that one of the parents was the "runt of the class," and matured later than other individuals of the same age. The *birth weight* frequently is low in primor-

TABLE 3

AIDS FROM HISTORY IN DIFFERENTIATING SHORT STATURE

	Hypothyroidism	Constitutional Delay	Hypopituitarism	Primordial Dwarfism	Gonadal Aplasia
Family History	Occasionally	Often	None	Occasionally	None
Birth Weight	Normal	Normal	Normal	Often Low	Often Low
Hypoglycemia	None	None	Often	None	None
Dental Eruption	Delayed	Minimally Delayed	Delayed	Normal	Normal
Growth Curve			See Figure 1		

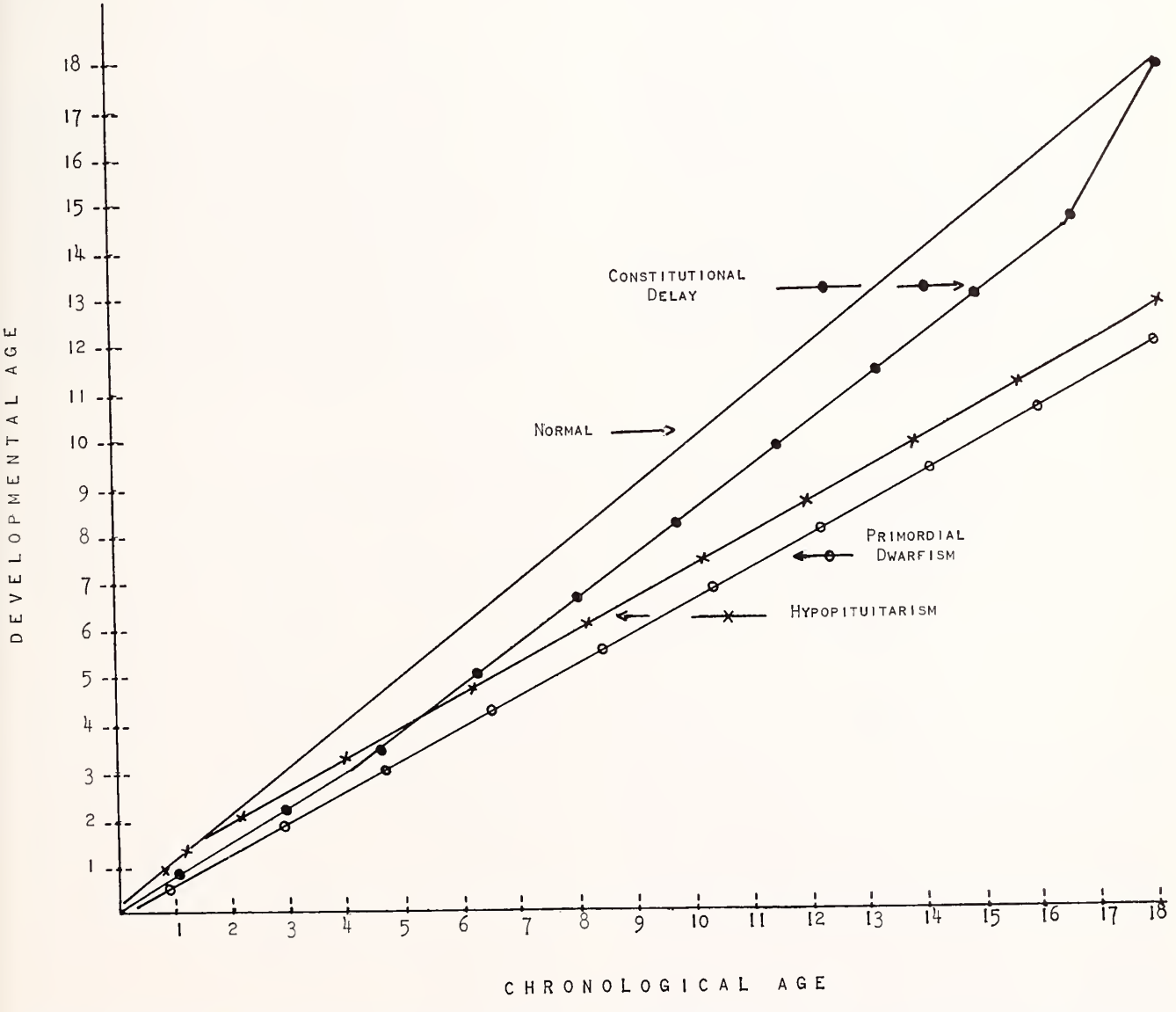


Figure 1. Characteristic growth curves observed in various types of short stature have been plotted. Growth of the patient with constitutional delay will ultimately be normal. This is not true, however, of the patients with hypopituitarism and hypogonadism.

dial dwarfism and gonadal aplasia. Congenital anomalies also are often present in these two entities. *Hypoglycemia* occurs only in hypopituitarism, but not in all such patients. *Dental eruption* follows the delay in skeletal development in cases of hypothyroidism, constitutional delay, and hypopituitarism, but usually is less retarded than bone maturation.

Evaluation of the growth curve is often helpful in the differential diagnosis (Figure 1). The patient with primordial dwarfism or gonadal aplasia characteristically has failed to grow from early infancy. The patient with constitutional delay falls behind in early childhood, but his growth later parallels the normal curve. He grows for a longer period of time than do most adolescents before the normal adolescent growth spurt occurs. The ultimate height is not affected.

Although there are exceptions, the patient with hypopituitarism characteristically grows normally during the first year of life, but then reaches a plateau, in his growth, and falls further and further behind each year. In a recent tabulation[3] the ages at onset of retarded growth secondary to hypopituitarism were recorded for 39 patients. Twenty-five had had this type of growth curve, and the remainder had failed to grow even during infancy.

Data obtained from the *physical examination* are listed in Table 4. The *facial features* are puffy in hypothyroidism. Patients with constitutional delay have slightly immature facies. In hypopituitarism the facies are quite juvenile, and often patients 14 years of age will look like eight- or nine-year-olds. The facial appearances of patients with hypopituitarism and constitutional delay may be difficult to differentiate. The facies of patients with gonadal agenesis are often characteristic, because frequently there is hypertelorism, a receding mandible, epicanthal folds, low-set ears, a low hair line, and a short neck. Some patients with gonadal agenesis, however, have perfectly normal facial features and no congenital anomalies. *Dwarfing* is usually less marked in constitutional delay than in the other entities. The presence of *sexual hair* in a short and otherwise sexually infantile adolescent female is evidence *prima facie* for gonadal aplasia, since the androgens largely responsible for the growth of sexual hair are produced by the adrenals and not by the ovaries. These patients often have an unusual body structure. In addition to the anomalies listed above, a broad thick chest, infantile nipples, a wide carrying angle, a high arched palate, coarctation of the aorta, deeply pigmented nevi, hypoplastic fingernails, genitourinary anomalies demonstrable by x-ray, and thick pedal arches may occur in gonadal agenesis. Measurement of the *skeletal proportions*—i.e. the upper-to-lower ratio—is often of assistance. In determining the ratio, one takes the total height measurement, and the measurement from the symphysis to the floor to obtain the lower measurement. The latter measurement is then subtracted from the total height to get the upper measurement. The upper-to-lower ratio changes from 1.67 in early infancy to 1.00 at approximately nine years, and to 0.97 in the average adult. Dwarfs with hypothyroidism have greater inhibition of growth in the lower extremities than in the trunk. Therefore, their upper-

TABLE 4

AIDS FROM PHYSICAL EXAM IN DIFFERENTIATING SHORT STATURE

	Hypothyroidism	Constitutional Delay	Hypopituitarism	Primordial Dwarfism	Gonadal Aplasia
Facial Features	Cretinoid	Slightly Immature	Juvenile	Normal, Progeroid or Pinched	Normal or Peculiar*
Dwarfing	Minimal to Marked	Minimal to Marked	Minimal to Marked	Minimal to Marked	Marked
Sexual Development	Infantile	Delayed	Infantile	Normal	Infantile Except Sexual Hair
Body Structure	Chubby	Normal	Normal	Subcutaneous Tissue Decreased	Normal or Peculiar*
Skeletal Proportions (U/L Ratio)	Immature	Slightly Immature	Normal	Normal	Normal

* See Text for Description

TABLE 5

LABORATORY AIDS IN DIFFERENTIATING THE CAUSE OF SHORT STATURE

	Hypothyroidism	Constitutional Delay	Hypopituitarism	Primordial Dwarfism	Gonadal Aplasia
Bone Age	Delayed (1-4+)	Delayed (1-2+)	Delayed (2-4+)	Normal or Delayed 1+	Normal or Delayed 1+
Water Tolerance	Usually Normal*	Normal	Often Delayed	Normal	Normal
Insulin Sensitivity	Normal	Normal	Often Positive	Normal	Normal
Buccal Smear	Normal	Normal	Normal	Normal	Usually Abnormal*
Protein Bound I^-	Usually Low*	Normal	Often Low Normal Or Low	Normal	Normal
I^{131} Uptake	Usually Low*	Normal	Often Low Normal Or Low	Normal	Normal
SU-4885	Normal	Normal	Often Abnormal	Normal	Normal

* See Text for Exception.

to-lower measurements are consistent with their height ages instead of with their chronological ages. In contrast, patients with hypopituitarism and gonadal agenesis have upper-to-lower ratios which are consistent with their chronological ages instead of their height ages. Upper-to-lower ratios for various ages can be found in Wilkins' textbook.[1]

Various *laboratory technics* (Table 5) can be of assistance in making a correct diagnosis. The *bone age* in primordial dwarfism and gonadal aplasia is seldom retarded more than one year compared to the chronological age. In constitutional delay, the bone age usually is not retarded more than two or at the most three years. In hypopituitarism the delay usually is more marked. In the short adolescent with sexual infantilism, a bone-age delay greater than three years is very suggestive of hypopituitarism or hypothyroidism. The degree of delay with hypothyroidism will depend upon the length of time the patient has been hypothyroid and upon the severity of hypothyroidism.

A simple screening test for hypopituitarism consists of a measurement of the volume of water excreted during a specific time following the ingestion of a *water load.** Forty-seven per cent of 34 patients with hypopituitarism recently were reported to have delayed water excretion.[3] This can be corrected through the administration of hydrocortisone or cortisone. The patient with severe chronic hypothyroidism also will have delayed water excretion, but only when the hypothyroidism is grossly obvious. The water-load test is normal in the other entities.

Insulin sensitivity, as determined by low blood sugars at the fourth and fifth hours of a glucose tolerance test or an intravenous insulin sensitivity test (0.1 μ/Kg body weight), occurs only in hypopituitarism.

The *SU-4885* test (Metapirone, Ciba) measures pituitary reserve for ACTH. With a normal pituitary-adrenal axis, the 17-hydroxysteroids become elevated when the drug is administered. In hypopituitarism the response is often decreased. For more complete details the reader is referred to the paper by Brasel *et al.*[3]

The *buccal smear* is chromatin negative in 80 per cent of patients with gonadal aplasia, and is normal for the phenotype in the other entities under consideration. The protein bound iodine (PBI) and radioactive iodine (RAI) studies are low in most types of hypothyroidism, and often are borderline low or slightly low in hypopituitarism. In the other entities these are normal.

EXEMPLARY CASES

Case No. 1: W. G., a white male 15 years and 5 months of age, presented because of short stature. The mother and father were of normal height, the maternal grandfather was 5 feet 3 inches, and the paternal grandfather 5 feet 6 inches. The pregnancy had been full term. The birth weight had been 5 pounds 11 ounces, and the length 19 inches. W. always had been shorter than average, and he continued two standard deviations below normal height. In the past year he had grown 2 inches. His health always had been good. Pubic and axillary hair had developed to a slight extent 18 months previously. The boy was beginning to be embar-

* After 6:00 p.m. at night, the patient is not permitted anything to eat or drink. The following morning at 8:00 he voids, and the urine is discarded. He then is given 20 cc. of water, per kilogram of body weight to drink over the next 30 minutes. The patient must be kept recumbent. Urine is collected at 9:30, 10:30 and 11:30 a.m., and at 12:30 p.m. Normally, at least 65 per cent of the water load is excreted in that period of time, and the volume excreted during the second hour is the greatest.

rassed by his shortness and his lack of sexual development.

At physical examination his height was 58 inches (height age 12½ years); the average height for boys of this age is 63.2 inches. The upper-to lower ratio was 0.90. The general examination was negative except for the fact that no 12-year molars were present. There were 35 black, straight axillary hairs, and 50 straight, black pubic hairs at the base of the penis. The testes were 2 × 1 cm. on both sides. The prostate was not palpable. The bone age was 12 years. The water load test, the insulin sensitivity test, the PBI and the RAI were normal. Because of the normal laboratory tests and the fact that the boy had consistently been two standard deviations below the average growth curve, the *diagnosis* of *constitutional delayed adolescence* was made. Treatment was successful in alleviating the psychological problems. (See under "Treatment," below.)

Case No. 2: J. H. (Figure 2) was seen when he was 4 11/12 years, with a complaint of small size. The family history was non-contributory. The past history was contributory in that the birth weight had been 4 pounds 9 ounces after a full-term gestation. The developmental history was unremarkable. The measurements at various ages indicated that this child had never grown normally, and had fallen further and further behind his cohorts.

At physical examination, the height was 35.5 inches (height age 30 months); the average for boys of his chronological age is 42.7 inches. His weight was 17.7 pounds and should have been 29 pounds for his height. The upper-to-lower ratio was 1.03. (The average for his age is 1.21, and the average for his height is 1.40.) The two-year molars were present; the subcutaneous tissue was very sparse. The bone age was 3½ years. Skull x-ray, intravenous pyelogram, non-protein nitrogen and electrolytes were all normal. The *diagnosis* of *primordial dwarfism* was made, and the boy was followed. At the chronological age of 13 years 2

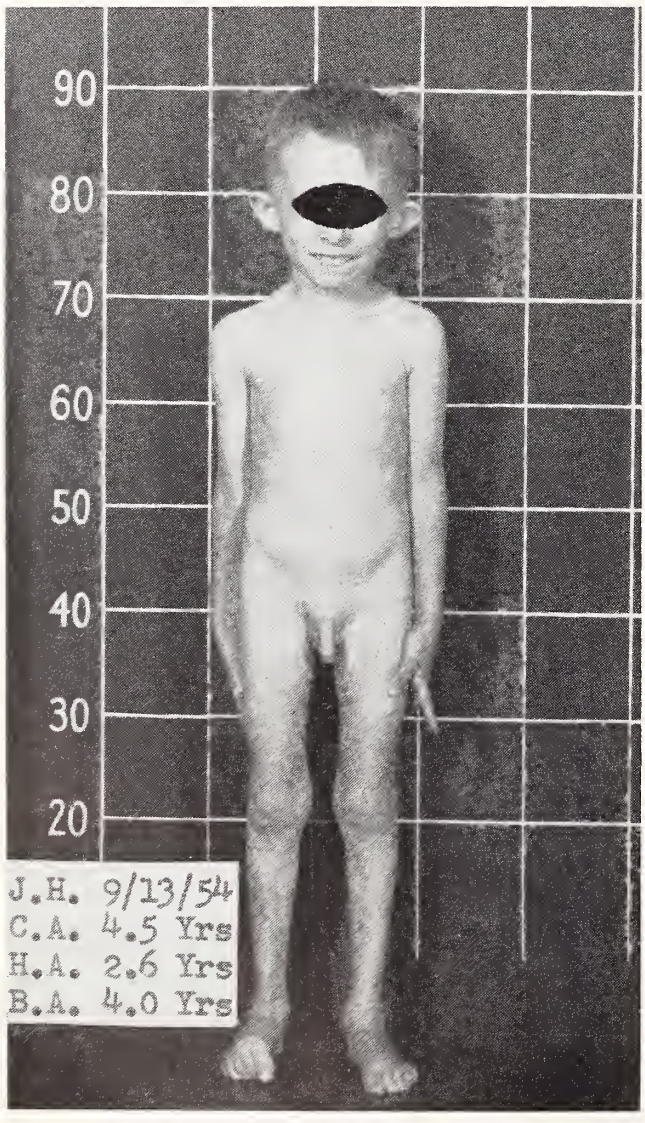


Figure 2. The pinched facies and the dearth of subcutaneous tissue found in one type of primordial dwarfism is apparent in this boy (patient No. 2, J. H.). Sexual development is normal in the primordial dwarf.

months, when he was seen again, his height was 52.75 inches (height age 9.7 years). The average for his chronological age is 59.25 inches. His weight was 49 pounds, and the average for his height is 62 pounds. The bone age was normal, and the boy was beginning to develop sexually.

Case No. 3: B. H., a white female, presented because of short stature at 9 11/12 years (Figure 3). The family history revealed that the mother was 5 feet 1 inch and the father 5 feet 8 inches. There were two paternal great uncles less than 5 feet tall. Two siblings were mentally and physically retarded. The cause was unknown. Although the gestation had been full-term and the birth weight had been 6 pounds 6 ounces, the birth length had been regarded as "short," though the exact length couldn't be verified. The developmental pattern had been normal except that the first deciduous tooth had not erupted until the age of 11 months, and the first permanent incisors until seven years. As a fourth grader in school, she was an excellent student and preferred sedentary activities. Her length at birth had been short, and she always had been shorter than her classmates. There was no history of cold intolerance or constipation.

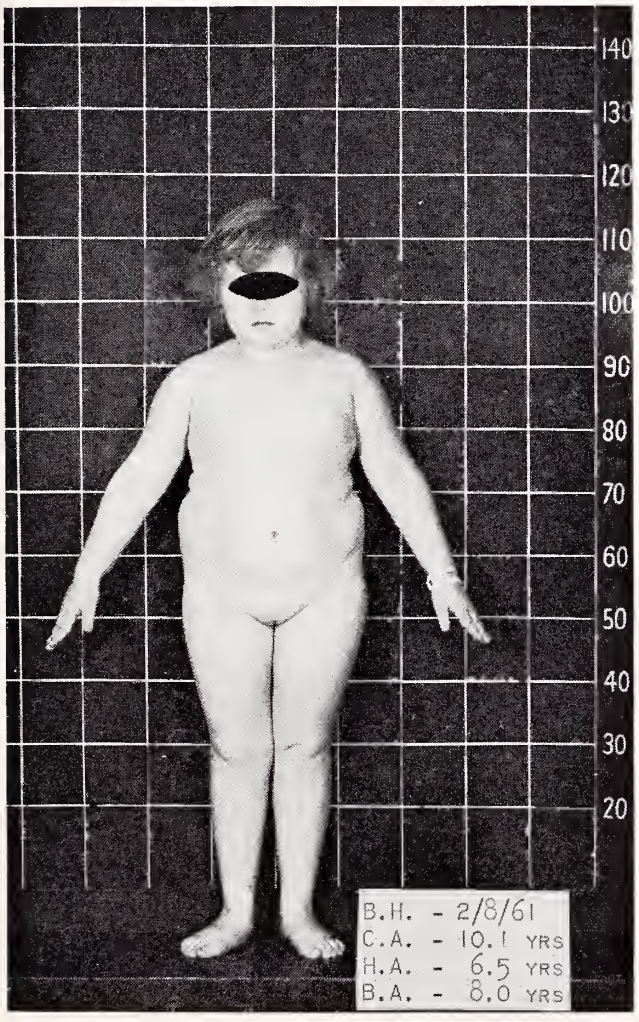


Figure 3. Patient No. 3, B. H., was chubby, but not grossly overweight. Except for her short stature, there were no physical findings of hypothyroidism. Epiphyseal dysgenesis and a delayed bone age prompted the diagnosis of hypothyroidism (see figure 4).

At physical examination, the blood pressure was 110/80 mm. Hg, and the pulse 88/min. Her height was 45.5 inches (height age 6.5 years), whereas the average for her chronological age is 53 inches. Her weight was 69 pounds and should have been 44 pounds for her height. The six-year molars and several permanent incisors were present. Sexual development was absent. The initial impression was genetic short stature. However, a bone age of approximately 6½ years and epiphyseal dysgenesis in the head of the femur (Figure 4) led to the *diagnosis* of *hypothyroidism.* This was confirmed subsequently by means of other laboratory studies.

Case No. 4: D. F., a 9 8/12-year-old white female, presented because of short stature (Figure 5). From the family history it was learned that the mother was 5 feet 0 inches, and the maternal grandfather 5 feet 5 inches. The birth weight had been 4 pounds 12 ounces, and birth had occurred at 7½ months' gestation. The girl's growth and development had been normal except for height. Measurements taken at various ages confirmed that she had always been short. Because of the familial short stature, the parents had not become alarmed until the girl was 8½ years of age and had grown only one inch in 12 months.

At physical examination, her height was 46 inches (height age 6½ years), whereas the average for girls of this chronological age is 52 inches. The upper-to-lower ratio was commensurate with the chronological age. A few short hairs were noted over the mons pubis, but there was no other sexual development. The bone age was 9½ years. The skull x-ray was normal. The water load was 98 per cent of normal. The buccal smear was chromatin positive. The calcium, phosphorus, alkaline phosphatase, etc., were all normal. A definitive diagnosis could not be made at that time.



Figure 4. Epiphyseal dysgenesis of the head of the femur is often found in hypothyroidism. Epiphyseal dysplasia multiplex is the only entity that can be confused with this disturbance.

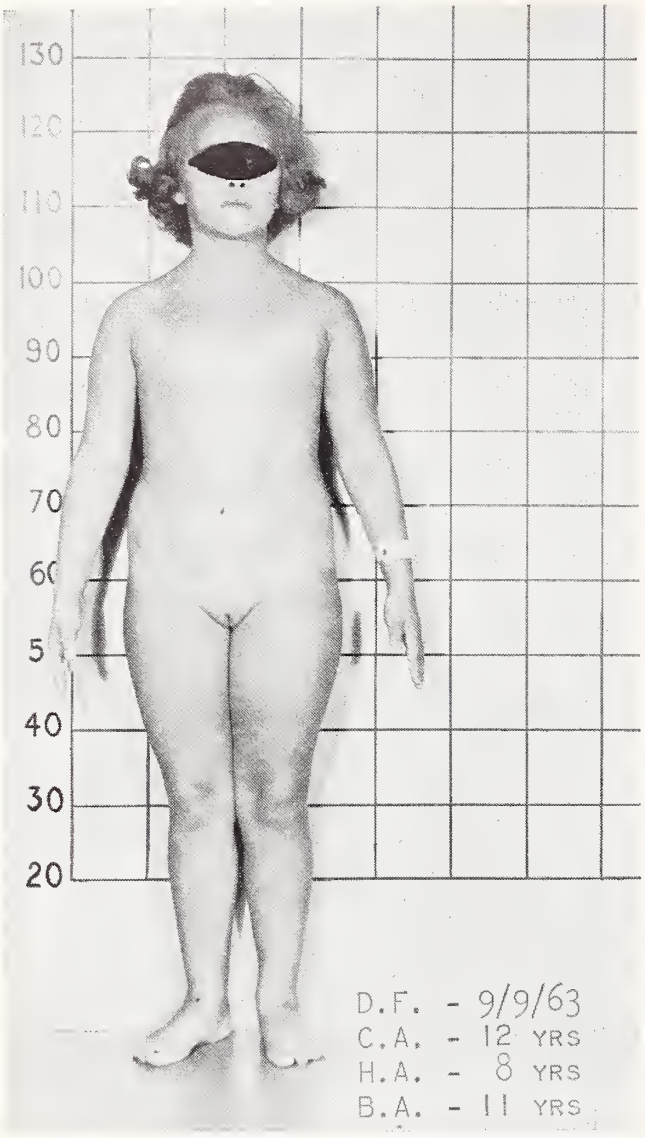


Figure 5. D. F., patient No. 4, had few of the physical stigmata associated with gonadal agenesis. However, short stature and the growth of sexual hair in the absence of other secondary sexual characteristics were indicative of gonadal agenesis.

Two and one-half years later, at 12 9/12 years, her height was 49 inches (height age 8 years). The average height for her age was 57 inches. Physical findings were unchanged from those of the previous exam except that there were a few more pubic hairs and 10-20 dark axillary hairs bilaterally. Bone age was 11 years. Because of the prolonged presence of sexual hair, in the absence of other secondary sexual characteristics, *gonadal agenesis* was considered as the most likely diagnosis. This was confirmed by the finding of gonadotropins in the urine at a time when the girl was sexually infantile.

Case No. 5: A. W., a 6 2/12 year old white female, presented because of convulsions and short stature (Figure 6). From the family history it was learned that five siblings were all of normal size, the mother was 5 feet 5 inches, and the father was 5 feet 9 inches. The birth weight had been 8 pounds, and early development had been normal until approximately nine months or one year of age, after which time there had been a marked slowing of growth. At two years of age she had been obviously short. Marked constipation had been present since infancy, but the child was active. The first convulsive episode had occurred before breakfast one day during her third year, and recurrent seizures had occurred every 2 to 3 months at times of fasting. A high protein, low carbohydrate diet was helpful in managing her convulsions.

At physical examination, the height was 35.5 inches (height age 31 months) whereas the average height for girls of her age is 45.0 inches. The upper-to-lower ratio was more commensurate with her chronological age than with her height age. There were no six-year molars, and no secondary teeth. The remainder of the examination was negative. The bone age was four years, and the skull x-ray was normal. Urine, electrolytes, cholesterol, BUN and PBI were normal. Fasting hypoglycemia was demonstrated, as was hypoglycemia at the fourth and fifth hours of a five-hour glucose tolerance test. In a water load test, only 45 per cent of

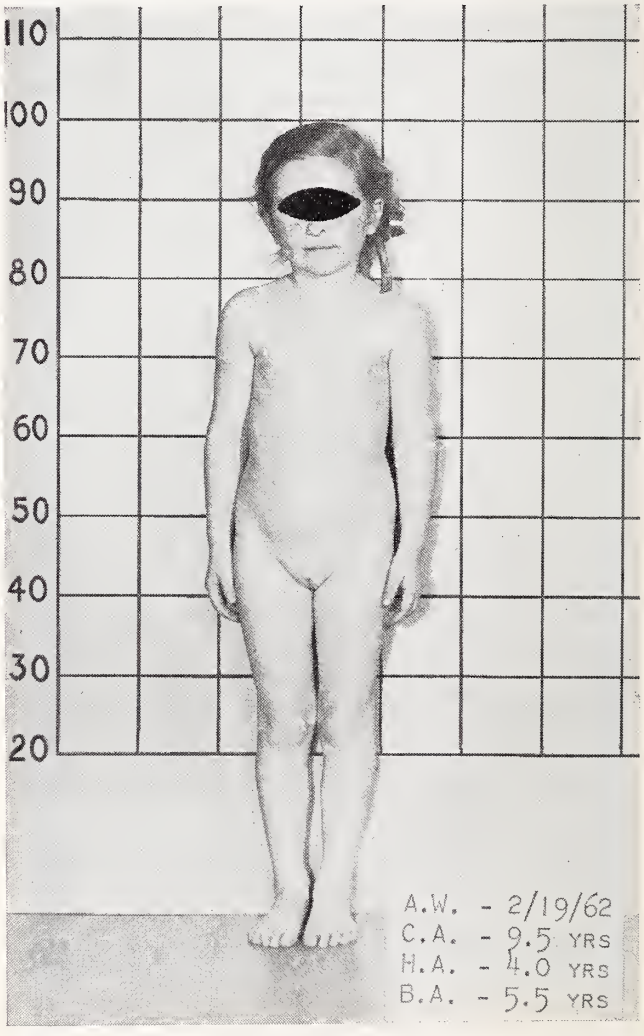


Figure 6. The marked dwarfing and the extreme juvenile appearance of A. W., patient No. 5, were more compatible with hypopituitarism than with any other diagnosis (see text).

ingested water was excreted. The PBI and RAI were normal. A *diagnosis* of *hypopituitarism* was made on the basis of the delayed water excretion, the retarded bone age, the hypoglycemia, the growth curve, and an abnormal response to Metapirone.

TREATMENT

The concept that one should not interfere with nature by using hormones in patients with *constitutional delay* has been altered in the last five or six years. Because of the psychological difficulties which often result from short stature and sexual infantilism at the age of 14 or 15, testosterone is used in boys in the form of methyl testosterone orally (20 mg./day), or testosterone enanthate or cyclopentyproprionate intramuscularly (200 mg./month) for a period of six or seven months. Prior to beginning therapy, it is most important that the diagnosis of constitutional delay be made, if at all possible, since androgen therapy will advance the skeletal development and cause sexual development, both of which obscure the diagnosis. Before treatment the boy is told that he is developing slowly but perfectly normally. Reassurance that there is nothing wrong with him is extremely important. He is told that eventually he will develop sexually, but that if he is extremely embarrassed by his short stature and sexual infantilism, the doctors can "help nature out." It is explained that he thus may sacrifice an inch of his ultimate stature, and the choice of receiving treatment or not is then left to him. The results of treatment are usually very rewarding. The one to two inches which he grows and the sexual development which he obtains from treatment serve to restore his confidence and to permit his psychological readjustment, provided that he has no other deep-rooted psychological problems. At the end of six or eight months, therapy is discontinued for a period of nine to 12 months, during which time testicular maturation usually occurs spontaneously, and further treatment becomes unnecessary. Occasionally, however, a second course of therapy is indicated.

The response to treatment in *primordial dwarfism* is very unsatisfactory. Data accumulated to date strongly suggest that human pituitary growth hormone is ineffective. The supposedly non-androgenic protein anabolic steroids are contraindicated, because ultimate height is probably sacrificed even though a very transient gain in height may be obtained.

U.S.P. desiccated thyroid, at a dosage of 2 to 3 grains in the pre-adolescent or adolescent, or thyroxin or triiodothyronine in an equivalent dosage, can restore euthyroidism and evoke "catch up" growth in the *hypothyroid* patient.

Treatment of gonadal agenesis is limited only to the treatment of the sexual infantilism. Estrogen therapy (preferably Premarin at a dosage of 1.25 mg. or 2.5 mg. per day) is begun at the age of 14 or 15 years. Treatment is delayed until this time because it is believed—though it hasn't been proved—that the patients attain a greater ultimate height if treatment is delayed as long as possible. Premarin is preferred to stilbesterol because there is no associated pigmentation of the nipples, and there are fewer gastrointestinal symptoms. With daily medication, menstruation usually occurs in four to six months. The hormone is then discontinued for one week, and cyclic therapy is begun (three weeks of treatment and one week off). Possibly, human growth hormone in pharmacologic doses will increase growth in these individuals, but pending discovery of a source of human growth hormone other than human pituitaries, the limited supply of growth hormone prohibits its use in these patients.

In the last six years, the effectiveness of human growth hormone in the treatment of *hypopituitarism* has been adequately demonstrated. Many articles have been published,[4, 5, 6] and details concerning treatment can be obtained from these references. An example of the effectiveness of therapy is the result achieved in a patient 5 years of age who grew 5 inches while receiving hormone over a 16-month period. This increment contrasted with a growth of just one inch per year previously.

Unfortunately, it requires the hormone from 200 to 250 pituitaries to treat one patient for one year. Therefore, treatment is currently limited to patients who are undergoing investigative studies at university centers where the physiologic and biochemical actions of growth hormone can be studied simultaneously with the administration of therapy. Ultimately, treatment will be available for all such patients, when at every autopsy in this country the pathologist removes the pituitary for purposes of having hormone extracted, when the hormone is synthesized, or when animal hormone is converted into a component active in the human. The latter may be feasible, for animal growth hormones are usually of much higher molecular weight than the human growth hormone; possibly an active core common to both hormones can eventually be obtained by fractionation of the protein molecules.

Psychological therapy must certainly be given to the patient with short stature and sexual infantilism. A boy with constitutional delay must be reassured that there is nothing basically wrong with his homeostatic mechanisms. The patient with gonadal agenesis or hypopituitarism should be well informed that fertility is unlikely. It should be emphasized, however, that this does not mean that she or he may not have children, since the relationships that couples have with adopted children can be as gratifying as are those with children self-conceived. Parents must be encouraged—and told to encourage their friends and the child's teacher —to treat the short child in accordance with his chronological age instead of his height age. Otherwise emotional immaturity will persist and will create a tremendous handicap for the short adult.

SUMMARY

Some obscure causes of short stature and sexual infantilism at adolescence have been discussed. Examples of constitutional delayed growth, primordial dwarfism, gonadal agenesis, hypothyroidism, and hypopituitarism have been presented.

One usually can differentiate these entities by taking an adequate history, doing a complete physical examination, determining the bone age, and performing a minimal number of laboratory tests.

Treatment of short stature that has been occasioned by constitutional delay and hypothyroidism is most gratifying, as will be the treatment of the short stature in hypopituitarism when growth hormone can be made available. Treatment of constitutional delay, when indicated, can also be very rewarding.

The treatment of the sexual infantilism in hypopituitarism and gonadal agenesis stimulates the development of secondary sexual characteristics, but sterility persists.

Appropriate psychological treatment of short stature and sexual infantilism must always be given simultaneously with pharmacologic treatment.

ACKNOWLEDGEMENTS

I should like to express my appreciation to Drs. Lee Forrest Hill, Charlotte Fisk, Ralph Dyson, Jack Spevak, Dennis Kelly, and the other members of the Blank Memorial Hospital staff who, in the years 1952-1955, generously gave of their time to guide my training in pediatrics, and encouraged me to train further in pediatric endocrinology and metabolism.

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Neglected Children and the Celiac Syndrome

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SINCE GEE'S DESCRIPTION of the celiac syndrome in 1888, it has become generally recognized that a variety of disorders may give rise to it. These have been recently reviewed by di Sant' Agnese and Jones.[1] In recent years there has been increased interest on the part of physicians, legal authorities and social workers in the syndrome resulting from the physical abuse of children. Kempe *et al.*[2] have discussed its essential aspects as the "Battered-Child Syndrome," and Fontana *et al.*[3] have referred to it as the "maltreatment syndrome." A nutritional variant of the battered child has recently been reported by Adelson.[4]

In 1958 and 1959, we encountered three children under three years of age who showed the usually accepted criteria for the diagnosis of celiac syndrome but who, on further follow-up, were found to be victims of either parental abuse or neglect.

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One of these patients did not appear to recover until he, himself, was old enough to obtain the food he needed; the second rapidly recovered when placed in a good boarding home and properly fed; and the third was lost to follow-up, though not before it had been demonstrated in the hospital that her celiac syndrome was due to food deprivation. Adelson[4] accurately stated the diagnostic problem these children presented when he wrote: ". . . When a marantic or poorly nourished child is observed, a host of diagnostic possibilities may be entertained to explain the cachexia. Many of these possibilities necessitate the expenditure of much effort, time and money before they can be excluded. In such instances the differential diagnosis should include starvation as a result of neglect, ignorance or thoughtlessness." To emphasize and illustrate these remarks, the present cases are reported.

Case 1. A 2 4/12-year-old boy was admitted with a history of rheumatoid arthritis. The diagnosis had been made four months previously. His joint symptoms, which antedated this hospital admission by eight months, consisted of swelling of both elbows and knees, and accompanying pain and tenderness. Four months before admission at Henry Ford Hospital, the child had been admitted

to another hospital for a fractured lower right femur. He had been given steroids of unknown type and dose, but the medication had not influenced his symptoms. The fractured femur had been treated with a full-length cast.

A second complaint concerned excessive food intake since birth, and it was said that he ate "man-sized meals" all the time. Despite this history of hyperorexia, it was maintained that he passed only one or two foul stools daily, which were formed and of a brownish color. The child's disposition was irritable, and his mother stated he had had progressive growth failure since the age of 1½ years. The past medical history was unremarkable, except for the fact that one younger and two older siblings were described as sturdy children whose growth patterns were entirely different from the patient's.

The physical examination revealed a weight of 21 lbs. (weight age, 0 9/12 yrs.), a height of 31 in. (height age, 1 3/12 yrs.). Acute respiratory infection was present, and there were generalized factitious skin lesions with secondary infection. The child's nutritional state was poor, he was pot-bellied and he walked with his right leg externally rotated. Definite limitation of extension in both elbows was present, though pronation and supination were normal.

The hemogram and urinalysis were normal. A urine concentration of 1.028 was achieved. Platelet count, erythrocyte sedimentation rate and anti-streptolysin-O titer were normal. The serum calcium, phosphorus, alkaline phosphatase and electrolytes were all within normal limits. The serum cholesterol and cholesterol esters were normal. The total serum protein was 6.2 Gm. per cent and the serum electrophoretic pattern was normal. The oral glucose tolerance curve was normal. The vitamin-A uptake test revealed a vitamin A level of 49 mcg. per cent, and a serum carotene of 164 mcg. per cent. The sweat chloride concentration was 30 mEq./L. The protein bound iodine value was 6.2 mcg. per cent. The urinary 17-ketosteroid excretion per 24 hours was normal.

The skull films, intravenous pyelograms, chest films and flat films of the abdomen were normal.

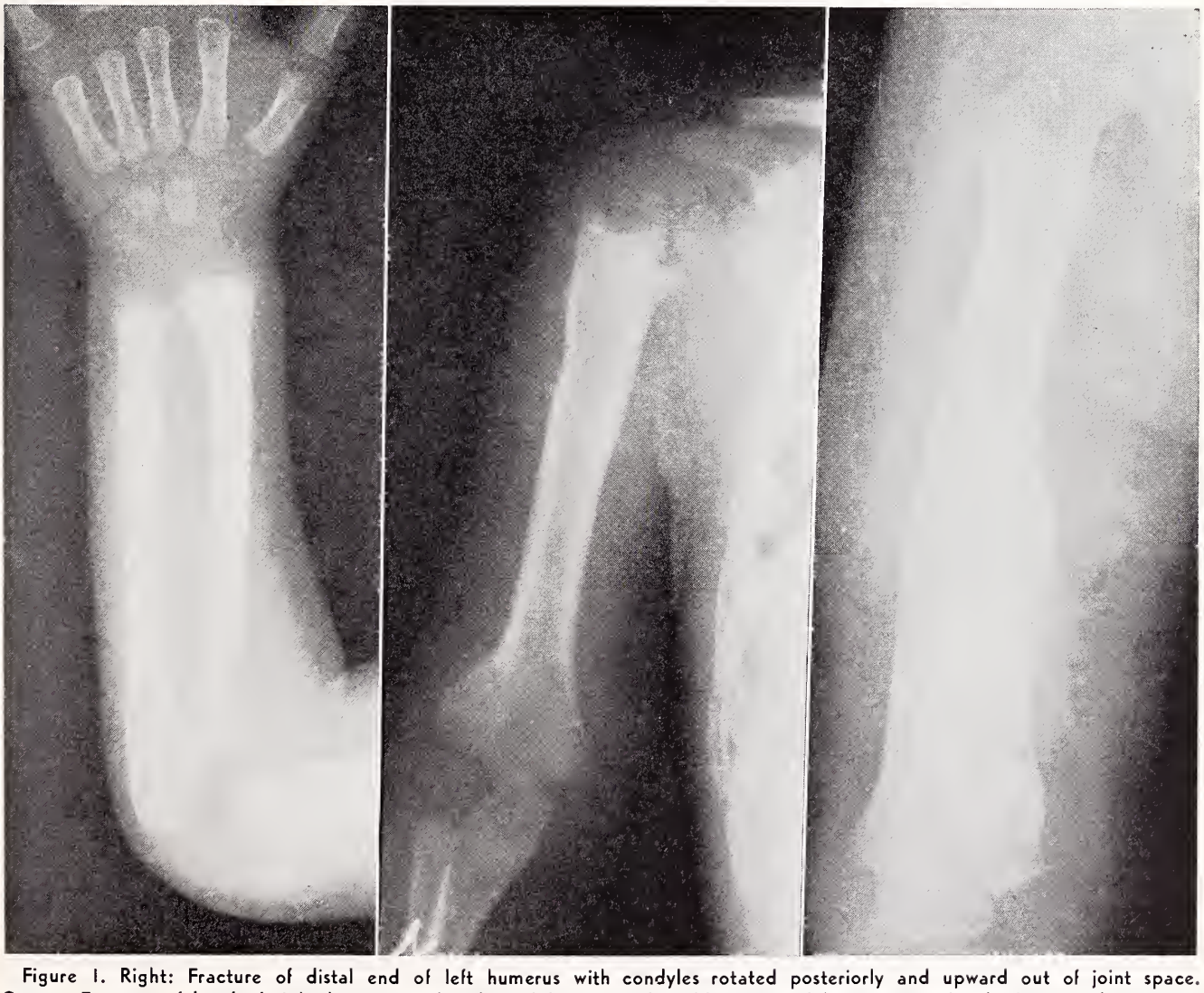


Figure 1. Right: Fracture of distal end of left humerus with condyles rotated posteriorly and upward out of joint space. Center: Fracture of head of right humerus with valgus deformity. Left: Old supracondylar fracture of right femur with extensive subperiosteal calcification indicative of old injury.

The carpal age was 1 3/12 years. Old fractures of both humeri and of the right femur were demonstrated radiographically (Figure 1).

Because this youngster's radiographic bone findings seemed to indicate the syndrome of unrecognized trauma, strenuous but unsuccessful attempts were made to obtain further information from his parents. The child was discharged with a diagnosis of suspected celiac syndrome, and was sent back to his referring physician on a celiac diet. No evidence of rheumatoid arthritis had been found.

Subsequent conversation with the referring physician, who practiced in another state, revealed that the patient never returned to him. Eight months later a physician in still another community phoned, seeking information regarding the child's hospital course. He said that the patient was under his care because of an occipital fracture alleged to have resulted from a fall down a flight of stairs. The child seemed subsequently to recover from this head injury, spontaneously and completely, but this hospital admission was complicated by the development of an acute abdomen, which on exploration was found to be due to a pseudocyst of the pancreas, with hemoperitoneum. The pseudocyst was drained, and a month later the child was discharged, apparently recovered. Follow-up by the same physician revealed that the child experienced no growth for the next year and a half, and that he was hospitalized again for an episode of suspected intestinal obstruction which cleared spontaneously. His local physician says that now, at the age of 6 5/12 years, he is a normal boy. His current measurements are: weight 50 lbs. (W.A. 6 9/12), and height 42 in. (H.A. 5 0/12).

Case 2. A 2 5/12-year-old white male was admitted with a history of a ravenous appetite for the previous six months. Stools since birth had been bulky and foul smelling, with a tendency to float. His mother had noted that the abdomen had become protuberant. He was said to bruise easily, and occasionally acquired abrasions which did not heal well. There was no history of lung infections. It was stated that he consumed a quart and a half of milk a day. The family history was non-contributory.

The physical examination revealed a small, poorly nourished boy with a pot belly. His height was 33 in. (H.A. 1 7/12), and his weight was 21 lbs. (W.A. 0 9/12). Minimal subcutaneous fat was present. Several ecchymotic areas were seen on the left cheek and left lower leg. The diaper area was ulcerated and excoriated. The remainder of the physical examination was unremarkable, except for moderately enlarged inguinal lymph nodes.

The hemogram showed hypochromasia, anisocytosis and poikilocytosis. Urinalysis was normal. Two oral glucose tolerance tests were done, and they showed flat curves. A vitamin-A uptake test revealed a level of 36 mcg. per cent and a serum carotene level of 208 mcg. per cent. No fat was demonstrated in the stool with Sudan III stain, and 4+ starch granules were found in the stool. Duodenal drainage revealed a viscosity of 3.4. Duodenal fluid enzyme studies were normal.

The chest film and a flat film of the abdomen revealed no abnormalities.

The boy was placed on a celiac diet and discharged with a diagnosis of celiac syndrome. He was followed at fairly frequent intervals in the out-patient department, and for reasons not clear at the time did very poorly (Figure 2). His nutritional state improved very little, he grew very slowly, and he continued to have ulcerated, infected diaper dermatitis.

Twenty-two months after his first admission, an aunt brought him to the Emergency Room because of an acutely distended abdomen and fever. Examination at this time revealed a malnourished lad with growth failure and little else in the way of physical findings. He remained in the hospital for a week, during which time a flat oral glucose tolerance curve was again demonstrated on two occasions. The vitamin-A uptake was again subnormal. Sudan III showed no fat in the stool, but 4+ starch granules were present. The alkaline phosphatase concentration was 3 B.U. The sweat chloride concentration was 20 mEq./L., the total serum protein was 6.2 Gm. per cent, the serum electrophoretic pattern normal, and the protein bound iodine value was 6.8 mcg. per cent. The flat film of the abdomen on admission revealed a distended abdomen, with some dilated loops of small bowel and considerable air in the stomach. Much stool was present in the colon. The carpal age was 2 8/12 years, whereas the chronologic age was 4½ years. The boy's hospital course was one of spontaneous improvement. He was placed on a celiac diet and a multiple vitamin supplement, and was noted to eat voraciously to the extent of third helpings of all foods.

The boy's father had been killed in an industrial accident before the second admission, and his mother had been left with five children to care for, including the patient. Eight months later it was learned that a sibling born after the father's death had been admitted to another hospital at two months of age because of starvation.

Neglect proceedings were instituted against the mother, and the court placed the patient in the temporary custody of an aunt, who provided the child with optimal care.

He was readmitted for re-evaluation six months after entering foster-home care, and the benefits of good nutrition in the foster home for a few months were already apparent (Figure 2). The boy's appetite had remained voracious, and the foster parents were attempting to satisfy it. His general appearance was markedly improved. The abdomen was somewhat protuberant, but the rest of the examination was negative. A repetition of laboratory studies showed that all abnormal values had returned to normal. The boy's carpal age

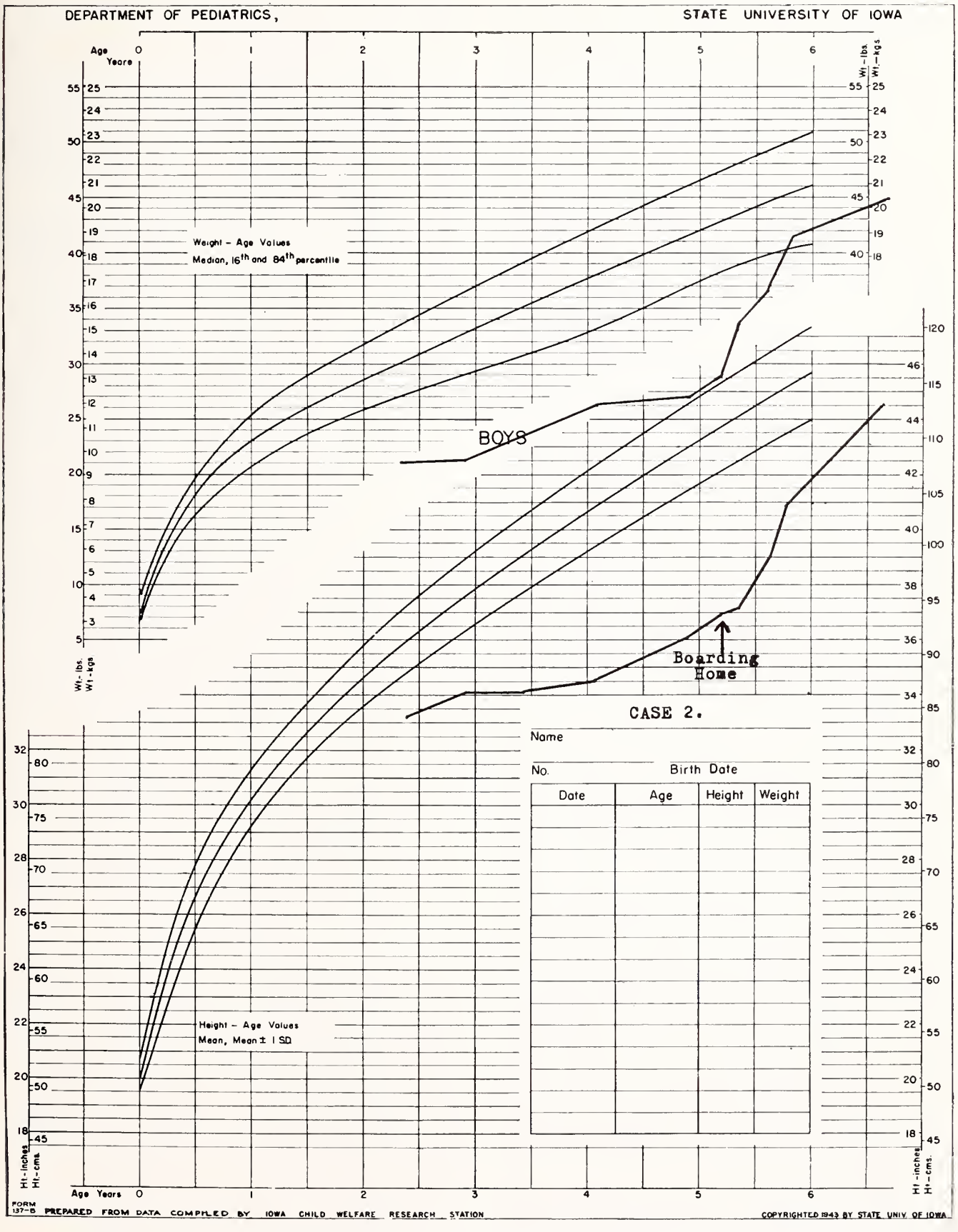


Figure 2. The boy in Case 2 has pretty largely overcome the effects of his early growth arrest, but he hasn't entirely made up for lost time.

was 2 8/12 years, and his chronologic age was 4 0/12 years.

The boy's response to proper care and nutrition in an excellent foster home established that his celiac syndrome had been a consequence of maternal neglect and malnutrition. The child has continued to prosper in foster-home care, and his foster parents are attempting to obtain permanent custody of the child, now eight years old.

Case 3. A nine-month-old white female was admitted because of poor growth and development. The history revealed that the child drank less than 20 ounces of milk per day, and ate about one to two jars of strained food per day. The mother thought that these amounts constituted adequate food for her. The infant had been seen by a physician once since birth, and no immunizations had been given. No history of stool abnormalities or respiratory disease was obtained. A 6½-year-old sibling had died earlier, of pneumonia. A 3½-year-old sibling was described by the parents as small in size, as were the parents.

The physical examination revealed a pale, blond, emaciated infant with pot belly. Her weight was 9 lbs. 12 oz. (W.A. 6 wks.), and her height was 22 in. (H.A. 7 wks.). A grade I systolic murmur was heard at the apex. In the protuberant abdomen, the liver margin was palpable two centimeters below the costal margin. The extremities and buttocks were wasted. The child did not sit or smile, and was irritable. The admitting diagnosis was malnutrition, but it was felt that absorptive defects and abnormalities in other systems should be excluded.

A hemogram showed a hypochromic anemia of 8.5 Gm. per cent. Urinalysis, serum electrolyte studies, serum calcium, phosphorus, alkaline phosphatase and blood urea nitrogen values were normal. Several oral glucose tolerance curves were flat. Quantitative stool-fat determinations showed 15 per cent fecal excretion of ingested dietary fat. A vitamin-A uptake test yielded a value of 176 mcg. per cent, and a serum carotene value of 340 mcg. per cent. Sweat chloride concentration was 15 mEq./L., and the protein bound iodine value was 7.2 mcg. per cent. The serum electrophoretic pattern demonstrated a total serum protein concentration of 5.2 Gm. per cent. Paper electrophoresis yielded values for the serum protein fractions all at the lowest limits of normal for our laboratory.

The chest film, gastrointestinal series, small bowel series and skull films were normal. Films of the pelvis and knees showed a decrease in bone mineralization, with some coarsening of the trabecular pattern and thinning of the cortex. The carpal age was 9/12 years.

A diagnosis of celiac syndrome was made. The child was discharged for follow-up in the out-patient department, but she was brought there only twice during the subsequent nine months. During these visits a curious disparity was noted between the child's reported food intake, stool output and growth. She was readmitted to the in-patient department nine months after her first admission. From the history obtained at that time, it was learned that she had actually lost weight since her first admission, despite an alleged ingestion of four jars of strained meat, four jars of strained vegetables and 32 ounces of skim milk each day. The mother also admitted that she not infrequently gave the child wheat products, though she had been discharged on a gluten-free diet.

Examination revealed a marasmic, fretful infant who did not cry and was pale and listless. There was no apparent subcutaneous fat. Her heart murmur had increased in intensity. The abdomen was negative. The extremities were cachectic.

A mild anemia of 9 Gm. per cent hemoglobin, with hypochromic, microcytic erythrocytes, was demonstrated. The urinalysis, serum electrolytes, serum calcium and phosphate concentrations were normal. The alkaline phosphatase was 1.5 B.U. The serum protein determination and electrophoretic pattern demonstrated a total protein of 5.2 Gm. per cent, with abnormally low levels of all serum protein components. The vitamin-A uptake yielded a value of 318 mcg. per cent. A five-hour oral glucose tolerance curve was again flat. The protein bound iodine value was 5.1 mcg. per cent.

During her month's stay in the in-patient department on a celiac diet, the child gained a little over four pounds of weight. She was discharged after a month in the in-patient department, and was seen for two pediatric follow-up visits, by which time her weight had increased to 17 pounds 6 ounces. Follow-up information was obtained later from a local social agency that made inquiries of the clinic regarding the child. It was then learned that the police had investigated the home situation, had found it deplorable, and had requested the agency to deal with the social aspects of the family's problems.

It was thus finally established that the child's sole difficulty was malnutrition incident to a hopeless parental inadequacy.

DISCUSSION

Case 1 is a striking example of the combination of the celiac syndrome, the battered-child syndrome and starvation. Here the pattern of repeated physical violence to one child of several in the family continued to the point of almost killing the child. It is suspected that trauma to the abdomen must have been repetitive to account for the pseudocyst of the pancreas found at operation performed for hemoperitoneum, since the pseudocyst was presumably of post-traumatic origin and would have required some time for formation.

Something of the family's social situation was learned later from the referring physician. The father's employment kept him away from home much of the time, and the mother was known to be promiscuous. It appears, however, that condi-

tions have improved within the family, for the physician who now cares for the whole family finds no evidence of social pathology and regards the boy as normal. The reason for the apparent improvement is unknown. Though his weight age is consistent with his chronological age, his height age would indicate that he did not completely recover from his years of nutritional deprivation.

The diagnosis and management of Case 2 was complicated greatly by the mother's personality. Throughout our contact with her, she maintained a noticeable blandness of affect which made history-taking scarcely worthwhile, and made it unlikely that she would carry out treatment instructions. Only when the starvation of a new infant brought her to the attention of the police, could it be established that the cause of celiac syndrome in the older child was actually starvation. After the court removed the patient to boarding-home care, the woman was arrested for running an unlicensed drinking establishment for the convenience of the neighborhood adolescent population. Because of the Social Security benefits to which he was entitled because of his father's death, she made strenuous legal efforts to regain custody of the child.

It is an interesting commentary on our society that this mother probably received a larger income from Social Security, life insurance and union benefits after her husband's death than she had at any time while he was gainfully employed as an apprentice plumber.

The boy, now age 8 years, has pretty largely overcome the effects of his early years, though because of neglect he is still badly scarred from old ulcers in the diaper area, and has never fully made up for the growth failure occasioned by starvation (Figure 2).

In Case 3, the child's starvation stemmed from inborn parental ineptitude. These parents were so poorly endowed intellectually and emotionally that they were barely able to make their own way in society, and it appeared that the burden of child-rearing exceeded their meager resources. What role ignorance and neglect may have played in the pneumonia death of a 6½-year-old child is unknown. The "small" 3½-year-old sibling was never seen at this clinic. The patient also showed developmental retardation—almost certainly of environmental origin. A social agency attempted to work with the parents, but contact had been maintained for only five months when the family moved to another community in pursuit of menial employment, and nothing had been accomplished during this period.

Of particular clinical interest in these cases are the facts that a diagnosis of celiac syndrome was made on all three patients after considerable investigation and that the only difficulty in each instance was that the child had been starved. Each time, a matter of months elapsed before it was appreciated that the histories obtained from the parents had been completely false. Physical findings in each case were quite consistent with the diagnosis—i.e. irritability or apathy, pot belly, wasted buttocks and loss of subcutaneous fat. Laboratory investigation yielded results which confirmed the presence of malabsorption; the blood picture suggested mild nutritional anemia; serum protein concentration was diminished chiefly in

TABLE I

	Case 1	Case 2	Case 3
Age	2 4/12 yrs.	2 5/12 yrs.	0 9/12 yrs.
Personality	irritable, depressed	depressed	irritable
Emaciation	moderate	severe	extreme
Pot belly	+	+	+
Stools	foul, formed, brown	foul, bulky, float on water	normal
Hemoglobin	10.9 Gm.%	10.8 Gm.%	8.5 Gm.%
Erythrocytes	microcytic	hypochromic, anisocytosis, poikilocytosis	hypochromic, microcytic
Serum protein	6.2 Gm.%	6.6 Gm.%	5.2 Gm.%
albumin	3.9 Gm.%	3.3 Gm.%	3.0 Gm.%
globulin	3.3 Gm.%	3.3 Gm.%	2.2 Gm.%
Stool starch		4+ granules	
Glucose tolerance curve	normal	flat	flat
Stool Sudan III		none	
Stool fat—quantitative			15% of ingested fat
Serum cholesterol	200 mg.%		
Vitamin A uptake	49 mcg.%	36 mcg.%	176 mcg.%
Duodenal fluid		viscosity 3.4, enzymes normal	
Sweat chloride	30 mEq/L	13 mEq/L	15 mEq/L
Carpal age	1 3/12 at 2 4/12 years	2 8/12 at 4 0/12 years	0 9/12 at 1 4/12 years

the albumin fraction; two patients showed impaired carbohydrate absorption; and all three patients showed impaired fat absorption and retarded skeletal age. Duodenal fluid and sweat chloride studies excluded cystic fibrosis (Table 1).

An explanation for these laboratory abnormalities, and thus for the diagnostic error they engendered, is to be found in the literature on infant malnutrition. Gollan[7] studied malnourished children in Naples following World War II, and found that the starving infant maintained his hemoglobin level much better than the starving adult. The values he reported were similar to those of the present patients. He also demonstrated that the reduction in total serum protein was chiefly in the albumin fraction, often with a reversal of the A/G ratio.

Trowell and Jelliffe[6] corroborate these observations, and state that the decrease in serum albumin is, in part, a reflection of liver dysfunction. They indicate further that, with severe malnutrition, there may be found failure of pancreatic and other digestive enzymes, so that there may be diarrhea, and indigested food may appear in the stools. McDougall,[7] however, found normal enzyme activity in the duodenal fluids of 18 malnourished children. It is certain, though, that if a child is sufficiently malnourished, a diminution of digestive enzymes will occur. Thus the data on the present patients, together with the data in the literature on childhood malnutrition, make it clear that the starvation of children is another cause of the "celiac syndrome" which will be missed unless the physician considers the possibility and diligently seeks evidence of it in the history.

SUMMARY

Three cases of starved children have been reported, on whom the diagnosis of celiac syndrome was made following the demonstration of malabsorption. The clinical histories had been convincing, and the physical findings had been consistent. Yet, subsequent information revealed unequivocal evidence of starvation.

In one case the patient not only had been starved but showed evidence of the battered-child syndrome.

It is emphasized that the clinical history should be questioned, and that starvation, for whatever reason, should be considered in the differential diagnosis of any child who presents with severe nutritional depletion.

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*Place of the Potato Chip in a Staple Diet**

Not too long ago, during a review of a scout film of the abdomen of a patient hospitalized for a routine hemorrhoidectomy, a metallic staple was observed in the right lower quadrant. To establish that the staple was definitely in the gastrointestinal tract and to follow its progress to elimination from the body, several progress films were taken. Certain casual thought was given to how the staple arrived at its location in the gastrointestinal tract, but no good explanation was found. It was undoubtedly ingested, but the exact circumstances surrounding its ingestion remained obscure.

The films were reviewed in the presence of a senior medical student. He was questioned about what the metallic density represented. Being a particularly bright lad, he unhesitatingly answered, a staple. Then he astounded the observer by stating that he knew how it arrived in the gastrointestinal tract. He revealed that on several occasions, while preoccupied with other activities and munching potato chips, he had been forced to expectorate staples. These staples had fastened the top of the bag and in the process of opening had dropped into the bag. He was certain that on several occasions he had undoubtedly ingested staples, and that this staple seen on the patient's film was the *sine qua non* of the preoccupied potato-chip eater.

This possibility was considered with a certain healthy skepticism, but in the interest of medical progress, several observers were sent to the patient's room. The door was opened, and the proof was immediately evident. On the patient's bedstand was, of course, a bag of potato chips.

* This account, contributed by Robert L. Ruskin, M.D., of Detroit, to the NEW ENGLAND JOURNAL OF MEDICINE and published on page 841 in the issue of that magazine dated April 16, 1964, we hope is one that may properly be regarded as in the public domain.

ABO Incompatibility in the Newborn

A Review of Cases and Current Concepts

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THE DISCOVERY of the ABO groups by Landsteiner made modern transfusion technics possible. It was not until 1947, however, that Waterhouse and Hogben demonstrated that a maternal fetal reaction involving this group was one of the causes of hemolytic disease of the newborn. Overhadowed by the more fulminating Rh problems, the ramifications of ABO incompatibility have become appreciated only recently. The reasons for this tardiness are several. In contrast to Rh, the ABO incompatibilities are often seen in the first pregnancy, a time when there may be a false sense of security. The Coombs' test, helpful in Rh disease, is often negative in ABO. In addition, incompatibilities due to this cause are usually mild, and on occasion may blend into physiologic jaundice. But they may also be severe, and a threat both to life and to cerebral function.

MATERIAL

A review of the cases of ABO incompatibility diagnosed at St. Joseph's Hospital, Omaha, from 1960 to 1963 was undertaken. During that period, 9,283 newborns were delivered, and 34 cases of ABO incompatibility were found. Twenty-seven of these were of the O-A type, and several were O-B. Several infants required exchange transfusions. Two of these were of the O-B type, and five of the O-A. Two infants required two exchanges each, but none more than two. One case of A_1A_2 incompatibility was diagnosed, but since the mother was A_1 and the infant A_2, this diagnosis was discarded.

DISCUSSION

Seven out of 34 cases requiring transfusion constitute a high incidence, suggesting that only the clinically more severe cases were diagnosed. Most cases, as Zuelzer has pointed out, blend into physiologic jaundice or are not accompanied by a significant rise in bilirubin. In striking contrast to the situation sometimes seen in Rh babies, anemia

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TABLE I

CASES OF ABO INCOMPATIBILITY AT ST. JOSEPH'S HOSPITAL, OMAHA 1960-1963

	Type		Total Bilirubin	Exchange	Coombs	
	Mother	Infant	(highest read)		Direct	Indirect
1.	O	A	17.8	—	neg	neg
2.	O	A	19.9	—	neg	neg
3.	O	A	12.2	—		neg
4.	O	A	12.6	—		+
5.	O	A	16.7	—		+
6.	O	A	22.3	1		neg
7.	O	A	18.2	—		neg
8.	O	A	22.0	—		+
9.	O	A	17.9	—	neg	
10.	?	A	14.8	—		neg
11.	O	A	29.0	2		neg
12.	O	B	20.5	1		neg
13.	O	A	14.3	—		neg
14.	?	A	6.0	—	neg	
15.	O	B	25.0	1		neg
16.	O	A	21.6	1		neg
17.	O	A	13.1	—		neg
18.	O	B	17.2	—		neg
19.	O	A	30.0	2		+
20.	O	A	18.0	—		neg
21.	O	B	13.1	—		neg
22.	O	A	7.9	—	neg	
23.	O	A	2.8	—		neg
24.	O	A	25.9	1	neg	neg
25.	O	A	19.9	—		neg
26.	O	A	17.0	—		neg
27.	O	B	11.1	—		neg
28.	O	B	19.1	—		neg
29.	O	A	15.2	—		neg
30.	O	A	12.0	—		neg
31.	O	A	11.9	—		
32.	?	A	9.0	—		neg
33.	O	A	12.8	—		neg
34.	O	A	22.8	1		neg

was not a common finding. The lowest hemoglobin found was 14.4 grams, and the highest was 23.0 grams. No cases of fetal hydrops were attributed to ABO incompatibility. These observations would tend to confirm Brown's impression that with comparable levels of hemolysis, ABO disease has a more marked degree of jaundice. Reticulocyte counts and nucleated red cells were not greatly increased in these cases. The highest for the former was 7.2, and the mean was 3.7. One patient had 10 nucleated red cells per hundred counted, but the mean was 3.

DEVELOPMENT OF ABO AGGLUTININS

Although the ABO system is the only one in which plasma and serum regularly contain agglutinins which react with blood cells of other persons, it is incorrect to assume that these are naturally occurring. Such substances can be demonstrated as early as the second fetal month, but they are not fully developed at birth. They probably are wholly derived from the mother through the placenta. As McDuffy and Kabat have pointed out, there is no clear cut exception to the rule that antibodies are not produced in the absence of antigenic stimulus.

Since other body cells are able to absorb these agglutinins, isoagglutinins for the red cells of the host are usually absent, and one finds only those that are specific for other persons (heteroagglutinins).

By the third to the sixth month, the infant has begun to form agglutinins of his own. They are fully established at one year, and the stimulus for their production may come from a wide group of substances such as microorganisms (E. coli), food, and even immunizations (tetanus), which share antigenicity for this group.

ANTIGENS

When present on the surface of the red cell, these antigens are highly specific substances, probably complex polysaccharides, which are identifiable only by their reactions with homologous antibodies (hemagglutinins). The discovery that there is a qualitative difference in the reactivity of the A cells of various individuals has led to the conclusion that the cells themselves are of distinct types, and they are now classified as A_1 (strongly agglutinative), A_2 (weakly agglutinative) and still further as A_3, A_4, A_o and A_m. Thus we have an occasional A_2 mother whose offspring has ABO hemolytic disease.

PROPERTIES OF THE ABO ANTIBODIES

Although the complexities of structure of the A cell antigen are of great interest, it is the properties of the antibodies which spell the difference in hemolytic disease. It has become apparent in the last few years that several antibodies are capable of reacting with A_1 cells, and that these differ as regards size of molecule, ability to cross the placenta and effect on the red cell.

The standard or "naturally occurring" (saline) molecule antibody is large. On ultracentrifugation of the gamma globulin portion of the serum, where these antibodies (agglutinins) are found, the resultant molecular weight is found to be about 1,000,000 or in the nineteen-S range. These antibodies do not readily cross the placenta, and apparently do not play much of a role in ABO hemolytic disease. The discovery of antibodies in the serum of O mothers that react with A_1 cells, but are different from the "naturally occurring" (saline) antibodies, has added a great deal to our understanding of ABO hemolytic disease. In contrast to the saline antibodies, these are found in the 7-S portion of the gamma globulin molecule and are smaller in size, being in the range of 160,000. Besides being agglutinins, these antibodies are also hemolysins, capable of causing breakdown of the red cells as well as clumping. Gamma globulins of this size seem to cross the placenta regularly. In fact most of the gamma globulins found in the newborn are of the 7-S variety and are thought to have been derived from the mother

It has been possible to break down the 7-S globulins chemically. Of the three portions produced, two combined with A substance, but their capability of penetrating the placental barrier was no more than one-tenth that of the whole molecule. Only the third portion penetrated the placenta at the same rate as the whole molecule. This finding suggests that molecular size alone does not account for the fact that the 7-S group finds its way into the fetal blood stream. Indeed, no threshold has been found, beyond which amounts spill over into the cord blood. Thus Rosenfield has been led to postulate that a placental transport mechanism is present, and that these substances cross because of their molecular configuration, rather than because of their size.

ROLE OF THE O MOTHER

The role of the O mother seems to be critical in ABO disease. Other blood groups may be involved, but for practical purposes the mother is almost invariably an O. Group O individuals have higher levels of hemolysins in their blood streams, no matter what the blood group of the fetus. The chances are many times greater that they will be found in the fetus if the mother is an O and if they have been found in her. In fact there is some evidence that the agglutinins in O and A_2 mothers differ from those of A_1 and B mothers.

The finding that it is necessary for serum complement to be present when lysis of red cells by hemolysin occurs is also of interest. This is found in fresh serum and has led some to conclude that destruction of the red cells takes place in the peripheral blood, instead of in the spleen as seems to be the case in Rh incompatibilities.

GENETIC CONSIDERATIONS

The hazard to the fetus of these y_2 antibodies is very real. Waterhouse and Hogben, in their original observations, calculated the deficit of A infants born to O mothers to be 25 per cent over the number expected. These observations have been confirmed by other investigators. The blood groups had previously been regarded as immune to natural selection because they offered neither advantage nor disadvantage to survival. Anthropologic data had been gathered on the assumption that gene frequencies were stable, and the blood groups were used to trace ancient migrations of peoples. Now that the hazard to the fetus is known, a more dynamic balance is evident.

If we disregard the B groups for the moment, and consider only A and O individuals, we come to the conclusion that there must be an advantage to the heterozygote OA type to offset the increase in fetal wastage due to incompatibility. Since each individual heterozygote who dies prematurely will eliminate one allele for O and one for A from the gene pool, the inevitable conclusion is that the least common one will be eliminated entirely or will be maintained only by the haphazard of mutation. Since the less common gene is A, it is the one more likely to be eliminated. This, however, has not happened. Instead, this may be an instance of heterosis or hybrid vigor, leading to a situation where there is a balanced polymorphism, a mixture of genes.

Our information on this point is indirect, but differences are known. ABO incompatibility tends to prevent the more severe Rh incompatibilities. There is evidence to support the thesis that peptic ulcer is more common in group O individuals, whereas pernicious anemia, gastric carcinoma and diabetes mellitus are seen more frequently in persons of A type. In chickens, it has been found that breeding experiments which eliminate heterozygotes and confine the stock to one blood type tend to reduce vigor and fertility. Thus a gene that is too common for best advantage soon finds itself discriminated against, and contrastingly, one that is becoming rare finds itself advantaged. The result is a heterozygote balance that may be precarious enough to differ in various parts of the world.

CLINICAL CONSIDERATIONS

Although ABO incompatibilities are more frequently mild when clinically manifest than are Rh incompatibilities under similar circumstances, it is a mistake to consider them benign. The complications are at least equally severe, when they are marked enough to require treatment, and they occur in about one of every 30 babies who become jaundiced from ABO disease. The purpose of the exchange transfusion is to prevent brain damage, a complication which occurs at comparable bilirubin levels in both diseases.

As in Rh incompatibility, proper treatment begins before the baby arrives. The mother's ABO type should be ascertained, along with her Rh type. If she is type O, it is of value to test her husband to find whether he is an O or an A_2. If so, the dangers evaporate.

The question of early interruption of pregnancy in ABO disease has not been settled. McElin has considered two situations in which the question might come up: (1) in a woman who has had a previous baby with ABO hemolytic disease—particularly if she is at the end of the child-bearing period, where the hazard seems to be increased; and (2) in any group O mother who has had a previous baby with significant neonatal jaundice or who has had a child with unexplained congenital neurologic damage.

When a baby is born to a type O mother, cord blood is obtained and sent to the laboratory. The infant's ABO type is then determined, direct and indirect Coombs' tests are performed, and the levels of red cells and hemoglobin are determined. The bilirubin may be of great value, and should be determined. If it exceeds 4 mg. per cent, the infant will need an exchange transfusion in about 80 per cent of cases. Infants with O mothers and A, B, or AB blood types should be "flagged" with a red wrist band to alert nursery personnel. Serial bilirubins are obtained if the infant becomes jaundiced or the cord bilirubin is above 4 mg. per cent. The most widely accepted criterion for exchange is an indirect bilirubin above 20 mg. per cent, or a situation where such a level is anticipated. It can be expected if the serum bilirubin rises at a rate of 1 mg. per hour or faster. Repeated exchanges may become necesary to keep the levels below 20 mg. per cent in such instances.

When serious ABO disease occurs, it can be anticipated that all of the mother's subsequent babies will be affected, except those who are type O. If one child is an O, it is likely that half of the mother's subsequent children will be of that type.

The Coombs' test in ABO disease is not the reliable instrument that it is in Rh incompatibility. A negative test should not give a sense of security. Probably the incidence of positives would rise if several Coombs sera from various commercial sources were used, instead of just a single one. When this is done, about half are positive. Both indirect and direct Coombs are of value. A positive Coombs, when present, does not necessarily indicate severe disease.

SUMMARY

1. ABO disease, though often mild, is a threat both to life and to cerebral function.

2. A review of the case material from St. Joseph's Hospital, Omaha, has been presented.

3. There is a quantitative difference in the A-cell antigens of various persons, and the notations

A_1, A_2, A_3, A_4 and A_0 have been used to designate them.

4. Thus, anti-A and anti-B antibodies of O mothers are qualitatively different from those of women having other ABO types.

5. A review of clinical considerations has been made.

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The Prophylaxis of Meningeal Leukemia With Intrathecal Methotrexate

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TEN SUCCESSIVE CHILDREN with acute leukemia were given prophylactic doses of intrathecal methotrexate at monthly intervals in an effort to prevent episodes of meningeal leukemia. The results of this therapy will be described and discussed in this paper.

Meningeal leukemia is a frequent complication in patients with acute leukemia. It occurs in approximately one-fourth to one-third of all cases of childhood leukemia.[1] The incidence is probably greater among children in whom chemotherapy has been effective and the period of survival lengthened. This is a relatively large group when one remembers that with the present antileukemic drugs available it is possible for over 80 per cent of children to survive their disease for over one year, and that the median survival of these children can be extended beyond 18 months.[2]

The symptoms of intracranial leukemia are distressing to the patient. They often come at a time when the child is in complete hematologic and clinical remission, and these children, until treated, are incapacitated and unable to carry on their normal activities. Headache, nausea, vomiting, and marked irritability occur frequently. Cranial palsies, blindness, deafness, and hemiplegia are less frequent but more serious complications.[3]

Intrathecal methotrexate or radiotherapy of the brain and spinal cord have been shown to be effective in the treatment of meningeal leukemia.[4, 5] Complete and prompt remissions are obtained in most cases. Relapses occur, but they can be treated in similar fashion, and improvement can be expected. Despite the availability of an effective method of treatment, these children usually have had to suffer periods of discomfort, and in addition, are likely to have another one or two relapses each in the future, and if their meningeal leukemia is allowed to go untreated for too long or if it is not treated adequately, a child may be left handicapped and crippled by a severe neurologic deficit, until death occurs from the leukemia.

In 1961 we decided to see what effect monthly injections of intrathecal methotrexate might have in the prevention of meningeal leukemia, and also to see what influence the addition of this form of therapy would have upon the clinical course and duration of the leukemia. The excellent progress of the first child who was treated led us to manage the next nine successive leukemia patients in a similar fashion.

PATIENTS AND TREATMENT METHODS

Ten children with acute leukemia were treated by the author at the Raymond Blank Memorial Hospital for Children, in Des Moines, between February, 1961, and February, 1964. In addition to systemic chemotherapy for the leukemia, they were given prophylactic intrathecal methotrexate at monthly intervals. The dosage was 0.25 mg. to 0.3 mg. per kilogram, and the total dose administered in most cases was 5 mg. or 7.5 mg. This

amount was dissolved in 2 to 3 ml. of sterile water and was injected intrathecally.

As a rule, the intrathecal therapy was not started until the child was feeling well, and in clinical and hematologic remission. It was begun in one child at the end of the first week following the initiation of leukemia treatment, in four children during the second month, in three during the third month, in one during the fourth month, and in one during the fifth month. Nine of the ten patients in the study group received from eight to 31 intrathecal injections, respectively. One child was given only one. He received his first intrathecal methotrexate in the fourth month of treatment. He relapsed later that month, and we did not carry on with further lumbar punctures when it appeared that his leukemia was refractory. He died in the sixth month.

We were reluctant to continue treatment in children unless they were feeling well and unless they showed signs that their leukemia was responding to therapy. When the study was started, our plan was to withhold intrathecal therapy in patients after they relapsed. We believed that following the first relapse, any subsequent remissions would be of short duration, and that the patients would succumb to their leukemia before central nervous system involvement could cause any problems, particularly if they had had monthly intrathecal methotrexate previously. Later, it became apparent that the second remissions were lasting longer. Patients could develop meningeal leukemia during this period, and so it was decided to continue with the intrathecal therapy after the initial relapse.

A morphologic diagnosis of acute "stem cell" (lymphoblastic) leukemia was made in all 10 cases.

Initially, patients were given prednisone and 6-mercaptopurine. The daily dose of prednisone averaged 2 to 2.5 mg. per kilogram, and the 6-mercaptopurine, 2.5 mg. per kilogram. The steroids were continued for three weeks, and then were slowly reduced and discontinued in two to three weeks. The 6-mercaptopurine was continued until relapse occurred. Following the first relapse, patients were treated with steroids and methotrexate. The steroids were given for a four- to five-week period. Then they were discontinued, and the patient was maintained on methotrexate. Methotrexate was given orally during the early period of the study, and intravenously, 3 mg. per kilogram every two weeks, during the later period. Treatment varied following the second and third relapses, and consisted of combinations of steroids, cyclophosphamide, methotrexate, 6-mercaptopurine and vincristine.

REPRESENTATIVE CASE REPORTS

Case 1. K. M., a five-year-old Caucasian female, was admitted to the hospital in February, 1961, because of left-knee pain. There was no generalized adenopathy, or any hepatic and splenic enlargement. The hemoglobin was 12 Gm. per cent. The white count was 5,400/cu. mm., with 62 lymphocytes and 28 neutrophils per 100 white blood cells. The blood film showed some lymphocytosis. Platelets were not reduced. During her hospitalization the white count fell to 1,700/cu. mm. A bone marrow aspirate was obtained, and it showed replacement of normal marrow cells by lymphocytes and blast cells. A diagnosis of "stem cell" (lymphoblastic) leukemia was made, and steroid and 6-mercaptopurine therapy was started. She received 60 mg. of prednisone each day for three weeks, and then the dosage was tapered and stopped in two to three weeks, and the daily 50 mg. of 6-mercaptopurine was continued. The first intrathecal methotrexate she received was in July, 1961, five months after systemic leukemia treatment had been started. Subsequently she continued to receive monthly injections of methotrexate—first 5 mg. and later 7.5 mg. each month. At the end of the third year, intrathecal treatment was discontinued.

This youngster has remained in hematologic remission for 36 months. She received 31 monthly injections of intrathecal methotrexate and has remained free of neurologic symptoms. During the entire period the spinal fluid studies have always been normal, and there have been no apparent side-effects from the intrathecal therapy. It was discontinued at the end of the third year of her leukemia. This was the first child treated with intrathecal methotrexate, and her excellent response led us to carry on the present study. The next nine patients with acute childhood leukemia were treated in similar fashion.

Case 3. D. L., a five-year-old Caucasian girl, was seen in January, 1962. She had been ill for two weeks with fever and cough. Pallor, generalized lymphadenopathy, and hepatic and splenic enlargement were present. Her hemoglobin was 5.5 Gm. per cent, and the hematocrit was 18 volumes per cent. Her white count was 3,300/cu. mm., with only 22 neutrophils per 100 white cells. A blood smear showed some immature blast cells. Abundant platelets were noted on the blood film. A platelet count of 205,000/cu. mm., was reported. A bone marrow showed complete replacement of the normal marrow elements by lymphocytes and blast forms.

She was started on 40 mg. of prednisone and 50 mg. of 6-mercaptopurine daily. At the end of three weeks, the steroid dosage was slowly reduced, and it was discontinued in the fifth week. She was kept on 50 mg. of 6-mercaptopurine daily. Two months after leukemia therapy was started, she received her first intrathecal medication. Five milligrams of intrathecal methotrexate was given monthly from March, 1962, through November, 1962. Bone marrow relapse occurred in November.

A second remission was obtained with steroids and methotrexate. After she relapsed in Novem-

ber, she received no further intrathecal methotrexate until five months later, when she was admitted to the hospital, on April 2, 1963, with the complaint of headache. Her hemoglobin was 12.4 Gm., and her hematocrit was 40 volumes per cent. Her white blood cell count was 4,100/cu. mm., with 61 neutrophils, 31 lymphocytes, 5 monocytes, and 2 eosinophils per 100 white cells. The blood film was a normal one. The bone marrow showed no evidence of relapse. The pressure of the spinal fluid was 390 mm. H_2O. She had 195 mononuclear cells per cu. mm. The concentration of sugar was 26 mg. per cent, and protein, 35 mg. per cent. She was given 7.5 mg. of intrathecal methotrexate one day, and 5 mg. the next.

Her symptoms cleared promptly, and she was discharged. She was seen a month later and at that time, her spinal fluid examination was normal, she was asymptomatic, and she appeared to be in clinical and hematologic remission. An injection of 7.5 mg. of methotrexate was given intrathecally.

Hematologic relapse occurred three weeks later. A third remission was attempted with steroids and intravenous methotrexate. The methotrexate was given every two weeks in a dose of 3 mg. per kilogram, and she showed some improvement. The intrathecal methotrexate was continued every month from April, to August, 1963. Her condition became worse early in August, and she expired on August 11, 1963.

This five-year-old was the only one of the 10 patients in the study group to develop meningeal leukemia. She was given intrathecal methotrexate monthly from the second month through the tenth month. Following hematologic relapse in the tenth month (November, 1962), no further intrathecal treatment was given until April, 1963, when she developed meningeal leukemia. At that time she was in clinical and hematologic remission. She responded promptly to intrathecal methotrexate, but seven weeks later she was in full relapse. Meningeal leukemia may herald a hematologic relapse, as it did in this case. The prophylactic methotrexate was continued monthly from April, 1963, until the patient expired in August, 1963, in the twentieth month of her disease. There were no further neurologic relapses.

This patient received 15 intrathecal treatments during the course of her leukemia.

Case 8. R. S., a 10-year-old Caucasian male, had not felt well for two weeks. An external otitis media had responded poorly to treatment. Pallor, purpura, and hepatic and splenic enlargement were noted. His white count was elevated, and a blood smear showed many immature cells. A diagnosis of acute leukemia was made from a bone marrow aspirate. Admission to the Raymond Blank Memorial Hospital for Children followed, on December 14, 1962.

When admitted, he weighed 109 pounds and was 59½ inches in height. Pallor, petechia and purpura were present. His left external auditory canal was edematous and red, and contained cheesy, purulent debris. He had some small cervical and axillary nodes. The liver was 3 cm. below the right costal margin, and the spleen, 10 cm. below the left costal margin.

A hemoglobin was 8.4 Gm. per cent, and his hematocrit was 30 volumes per cent. A white blood cell count was 166,000/cu. mm. The platelets numbered 34,000/cu. mm. A blood film showed large numbers of lymphoblasts, a paucity of neutrophils and a reduction in platelets. Bone marrow smears showed almost total replacement of the normal marrow cells by lymphoblasts.

Initially he received 100 mg. of prednisone and 100 mg. of 6-mercaptopurine daily. A unit of whole blood was administered. The fall in the white blood cell count was slow, but by the tenth day, it was 18,300/cu. mm., with 6 per cent neutrophils and still with increased blast forms. He returned to school in January. When he developed some glycosuria and polyuria, there was a reduction in steroid dosage. Later it was withdrawn completely. The 6-mercaptopurine was increased to 125-150 mg. each day. In March he was feeling well. There was no pallor, adenopathy or visceromegaly. He had a hematocrit of 31 volumes per cent and a white blood cell count of 1,400/cu. mm., with 53 neutrophils, 43 lymphocytes, 3 monocytes and 1 eosinophil per 100 white cells. Normal numbers of platelets were observed on a blood smear. A bone marrow showed adequate numbers of megakaryocytes. There was an abundance of erythroid cells. Granulocytic precursors were depressed, and there was a slight patchy increase in background lymphocytes and in blast cells.

A month later, in April, the bone marrow aspirate revealed active erythroid and granulocytic maturation, and normal numbers of megakaryocytes. A hemoglobin was 11.7 Gm. per cent, and the hematocrit was 36 volumes per cent. The white blood cell count was 2,700/cu. mm., with 76 per cent neutrophils. A platelet count was 247,000/cu. mm. He felt well, his color was good and his skin was clear. There was no generalized adenopathy, and no spleen or liver enlargement. He appeared to be in complete remission. Ten milligrams of methotrexate were given intrathecally for the first and only time. His remission was short-lived. Two weeks later his white count rose suddenly to 36,000/cu. mm., and over 50 per cent of the mononuclear cells were blasts. Steroids and oral methotrexate and late intravenous methotrexate were tried, as well as cyclophosphamide, but there was no change in the downhill course. He expired on June 20, 1963.

Of our 10 patients, this youngster's response to treatment was the poorest. Intrathecal methotrexate was withheld until it appeared that he was in remission. When he relapsed and when he was not responding to treatment, we did not feel justified in continuing with further lumbar punctures.

RESULTS

Ten children were treated monthly with intrathecal methotrexate. The present study included children treated for acute leukemia from February 18, 1961, through February, 1964. The results of our using intrathecal methotrexate in the prevention of meningeal leukemia are given in Table 1. Of the 10 patients, only one suffered an episode of meningeal leukemia (10 per cent incidence), and there were no relapses.

The criteria for the evaluation of response to treatment in acute leukemia recommended by the Clinical Study Panel of the Cancer Chemotherapy National Service Center[6] were used. Treatment of all 10 children with systemic leukemia started after February, 1961, when the present study was initiated. None were carry-overs from an earlier date. In all 10, it was possible to achieve a complete remission (100 per cent incidence of remissions). Six of the group are still living. Three have never had any relapses and at present have been in complete clinical and hematologic remission for 36 months, 13 months and 12 months after their treatment for leukemia was started. Three are living, but have had one or more relapses.

Four deaths have occurred among the 10 children. The mean survival rate for this group is 18.5 months, with a range of 6 to 36 months, and the median survival rate is 18 months. Eighty per cent have survived their disease for more than 12 months. The results of the leukemia treatment and the survival data are given in Tables 2 and 3.

DISCUSSION

The central nervous system is not spared in leukemia. Leukemic infiltrates may occur in the brain, leptomeninges, and spinal cord. The chemical agents used effectively to control systemic leukemia—the folic acid antagonists and antipurines—are unable to cross the blood-brain barrier in sufficient concentrations to keep the leukemic cells from multiplying. Eventually, intracranial involvement is manifested clinically. Infiltration of the leptomeninges causes a disturbance in spinal fluid dynamics. Hydrocephalus and increased intracranial pressure develop. The symptoms of headache, vomiting, irritability, and visual disturbances follow. The spinal-fluid pressure is elevated, and there is a pleocytosis with an increase in mononuclear cells, many of which can be identified as blast cells. The spinal fluid protein is elevated, and the sugar may be reduced.

In meningeal leukemia, an outstanding pathologic feature is the infiltration of leukemic cells in the leptomeninges in both the dura and arachnoid.[7] In addition, there is perivascular cuffing. Infiltrates of leukemic cells are present about the blood vessels of the leptomeninges.

In intracerebral leukemia, one finds similar infiltrates in the intracerebral dura. Some of these grow large enough to compress the underlying brain and even, in some instances, to invade the cerebral substance. Perivascular cuffing around the intracerebral vessels is another common finding.

Methods for the treatment of intracranial leukemia have been available for a number of years. Nevertheless, one still sees and hears of children with more serious neurologic complications. Cranial nerve palsies, particularly of the sixth and seventh nerves, hydrocephalus, optic atrophy, blindness, hearing loss, severe behavior disturbances and hemiplegia can occur. Death is a rare occurrence. A good number of these complications have developed in children in complete clinical and hematologic remission.

Radiotherapy to the brain is effective, but is less

TABLE I

RESULTS OF INTRATHECAL METHOTREXATE IN PREVENTION OF MENINGEAL LEUKEMIA IN CHILDREN

Case	Date Leukemia Therapy Started	Date Inthrathecal Therapy Started	Number of Intrathecal Injections	Episodes of Meningeal Leukemia
1. K. M.*	2-18-61	7-10-61	31	0
2. E. P.	8-11-61	10-26-61	16	0
3. D. L.	1-11-62	3-11-62	15	1
4. R. H.	6- 5-62	6- 9-62	8	0
5. B. B.**	8- 8-62	10- 5-62	14	0
6. S. C.**	8-27-62	11- 3-62	12	0
7. K. H.**	9-16-62	11- 5-62	11	0
8. R. S.	12- 4-62	4-11-63	1	0
9. J. C.*	1-29-63	4-21-63	11	0
10. N. T.*	3- 8-63	4-14-63	10	0

* Patients 1, 9, 10 are alive and have had no relapses
** Patients 5, 6, 7 are alive, but have had one or more relapses

TABLE 2

RESULTS OF LEUKEMIA CHEMOTHERAPY

Case	Age (Years)	Sex	Clinical Data	Month of Relapse (Initial)	Survival After Initiation of Treatment (months)
1. K. M.*	5	F	No organomegaly WBC 1,700/cu. mm.	—	36+ (2-18-61 to —)
2. E. P.	3	F	Organomegaly WBC 1,100/cu. mm.	14th	29 (8-11-61 to 1- 2-64)
3. D. L.	5	F	Organomegaly WBC 3,300/cu. mm.	10th	20 (1-11-62 to 9-11-63)
4. R. H.	3	M	Organomegaly WBC 17,700/cu. mm.	7th	10 (6- 5-62 to 4-17-63)
5. B. B.**	5	M	No organomegaly WBC 3,000/cu. mm.	11th	18+ (8- 8-62 to —)
6. S. C.**	7	F	Organomegaly WBC 8,900/cu. mm.	9th	18+ (8-27-62 to —)
7. K. H.**	2½	M	Organomegaly WBC 14,600/cu. mm.	9th	17+ (9-16-62 to —)
8. R. S.	10	M	Organomegaly WBC 166,000/cu. mm.	4th	6 (12-14-62 to 6-20-63)
9. J. C.*	3	M	Organomegaly Low WBC	—	13+ (1-29-63 to —)
10. N. T.*	6	F	Organomegaly WBC 95,800/cu. mm.	—	11.8+ (3- 8-63 to —)

* Cases 1, 9, 10 are alive and have had no relapses
** Cases 5, 6, 7 are alive but have had one or more relapses

TABLE 3

SURVIVAL DATA IN TEN CHILDREN WITH ACUTE LEUKEMIA

Incidence of Remissions	100%
Mean Survival (months)	18.5*
Range	6 to 36*
Median (50%) Survival (months)	18
Per Cent Survival at 12 months	80%

* Six patients are still alive

popular than chemotherapy. A dose of 250-400r is given over a five- to seven-day period. The response is a little slower than is the usual response to chemotherapy. The alopecia which may follow is upsetting to the child, and also causes increased anxiety for the parents, even though they have been reassured the hair will grow back.

Conventional chemotherapy for acute meningeal leukemia is the administration of intrathecal methotrexate or aminopterin. The dosage schedule varies in different centers. Ours, previous to this study, was 0.25 mg. of methotrexate per kilogram on days one, three and five. The symptoms abate in a few days, and by the end of the period of treatment the spinal fluid findings are normal. Remissions usually occur, even in cases where the systemic leukemia has become resistant to methotrexate.

Although radiotherapy and intrathecal chemotherapy are both effective in the treatment of central nervous system complications in children, the possibility of relapse is not eliminated. In a recent article by Evans et al,[8] a study of children with meningeal leukemia revealed that 53 children had 150 episodes of meningeal involvement during their treatment period. The patients who were treated with intrathecal methotrexate had a mean symptom-free interval of 3.7 months (range 0-19 months), and in those treated with radiotherapy the mean symptom-free interval was 2.8 months (range 0-10 months). In another study Rieselbach and co-workers[9] reported 24 episodes of meningeal leukemia in 15 patients. These patients were treated with intrathecal aminopterin, and the median remission was eight months (range 2 to 68 weeks). In six patients treated for meningeal leukemia with intrathecal aminopterin and afterwards given maintenance intrathecal therapy at three- to four-week intervals, relapses occurred.

Our studies would indicate that these episodes

can be eliminated completely if intrathecal chemotherapy is started early in the course of the disease and continued at monthly intervals.

During the three-year period preceding the present study, eight children with acute leukemia were seen by the author. Three of the eight developed meningeal leukemia and suffered five episodes. In hospitals where larger numbers of children have been treated for acute leukemia, meningeal involvement has been reported in one-fourth to one-third of all cases. In our present study, only one attack of meningeal leukemia occurred among the 10 children who had been given prophylactic doses of intrathecal methotrexate. This was in a five-year-old girl who developed a hematologic relapse during the tenth month of her illness. The monthly intrathecal injections of methotrexate she had been receiving over an eight-month period were discontinued. Five months later she experienced her first and only episode of meningeal leukemia. Had the prophylactic administration of intrathecal methotrexate been continued, this single episode might not have occurred.

Some physicians may hesitate to perform monthly lumbar punctures in children who are free of central nervous system symptoms and have normal spinal fluid findings, particularly when there is a quick and effective way of treating the meningeal episodes. When meningeal leukemia occurs, it introduces an additional period of acute distressing symptoms, often in a child who has been feeling well. Normal activities come to a halt. The school child is kept out of school for a one- or two-week period. With prophylactic intraspinal chemotherapy, this can be avoided.

In an effort to reduce the number of intrathecal injections, we are about to begin a study in which radiotherapy to the brain and spinal cord will be given initally, followed by the bi-monthly administration of intrathecal methotrexate. The technic described by Rieselbach and his co-workers[10] for giving methotrexate will be used. Methotrexate is added to a larger volume of solution, so as to achieve a maximal subarachnoid distribution of the drug.

Despite the instillation of massive concentrations of methotrexate at monthly intervals and the prevention of symptoms of neurologic involvement, seven of the 10 children reported in this paper developed clinical relapses. Freedom from episodes of meningeal leukemia thus does not preclude hematologic relapse.

Ours is a small group of 10 unselected, successive patients treated over a three-year period from February 18, 1961, through February, 1964. None had been treated prior to the time the study was started. At the end of the three years, six of the 10 children were alive, and four had succumbed. Three patients had never relapsed and were asymptomatic 36, 13, and 12 months, respectively, after initial treatment. The median duration of the first remission was 10 to 11 months.

Survival rates in children with acute leukemia treated with chemotherapy have improved considerably during the past few years. Perrin and his co-workers[2] reported a group of 14 children treated with intravenous methotrexate given every two weeks after they relapsed on oral chemotherapy. With six patients still living, the mean survival was 20.4 months and the median (50 per cent) survival, 19.5 months. At the end of 13 months, 86 per cent were living, and at the end of 18 months, 71 per cent. Zuelzer[11] reported a larger group of 113 cases. Prednisone and 6-mercaptopurine were used during the early period of treatment, and later cyclic therapy with methotrexate and 6-mercaptopurine were used alternately. The incidence of remissions was 97.3 per cent. The median (50 per cent) survival was 20 months. The 25 per cent survival was 36 months, and 10 per cent were alive at five years.

In our group of 10 children, the incidence of remissions was 100 per cent. With six patients still living, the mean survival was 18.5 months, the median (50 per cent) survival was 18 months, and the patient survival at 12 months was 80 per cent. Ours is a small study group, but the results compare favorably with those achieved in larger ones. From a comparison of rates of survival, it appears that although intrathecal methotrexate therapy is effective in preventing meningeal leukemia, the duration of survival in children with acute leukemia is more likely influenced by their systemic chemotherapy.

Although in about 10 per cent of children with acute leukemia, periods of survival greater than five years are possible, one must look upon acute childhood leukemia as a generally fatal disease. In the management of these youngsters a cardinal principle is to strive constantly to avoid procedures which produce discomfort. Many feel that hospital admissions should be kept to a minimum.

Most of the children in this study entered the hospital for a 24 hour period when they were to get their intrathecal treatment. This was of financial benefit to the family. Our experiences with hospitalization of these youngsters were contrary to those reported by others. The children enjoyed their brief stays in the hospital, and came and left without shedding a tear. They looked forward to seeing their friends, participating in the numerous activities offered children, and continuing projects they had started during their previous admissions. Often they were reluctant to leave. A warm, friendly and confident relationship developed among the parents, the child, the physician and the other personnel involved in the treatment. This was extremely important. When a child's illness becomes worse and his condition is terminal, he thus is spared the final fears and anxieties otherwise occasioned by being away from home and in the hospital. To him, the hospital is a place where he is surrounded by friends who are trying to make him well.

Intrathecal methotrexate therapy spares the child the distressing symptoms of meningeal leukemia, but despite adequate preparation of patient and technical skill, lumbar puncture produces a considerable amount of physical as well as psychological trauma. For this reason we are reluctant, yet, to recommend monthly intrathecal methotrexate prophylaxis as a part of the therapy of acute childhood leukemia, until we have explored further the possibility of other procedures whereby the frequency of lumbar punctures may be reduced with equally favorable results. To date, however, we are convinced that freedom from episodes of meningeal leukemia means freedom from the distressing symptoms and complications of neurologic involvement, and also allows the child to continue his normal activities without interruption. Perhaps these advantages make prophylactic methotrexate therapy worthwhile.

SUMMARY

During the period from February 18, 1961, through February 29, 1964, ten successive and unselected children with acute leukemia were treated with intrathecal methotrexate administered at monthly intervals, in addition to their systemic chemotherapy, in an effort to control the frequent neurologic complications of acute leukemia. None of the children included in the study group had received treatment prior to February 18, 1961. During the treatment period designated, only a single episode of meningeal leukemia occurred among the ten children. This was in a child who had received no intrathecal therapy for a period of five months. It had been discontinued after her first hematologic relapse in the tenth month following the initiation of treatment for leukemia.

The incidence of clinical and hematologic remissions achieved in this study group was 100 per cent. The mean survival was 18.5 months, with six patients still living. The mean (50 per cent) survival was 18 months, and patient survival at 12 months was 80 per cent.

Prophylactic intrathecal methotrexate therapy does prevent episodes of meningeal leukemia which occur in about one-fourth to one-third of all cases of acute childhood leukemia. No recommendation is made to use intrathecal therapy as a therapeutic adjunct until more clinical data are available.

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Hawaiian Medical Seminar

The Hawaii Medical Association is to sponsor two consecutive medical seminars on June 26 to July 1, and July 1 to 5, immediately following the annual meeting of the American Medical Association. The package prices for two persons, including plane fares, hotel accommodations, and some of the meals and entertainment, are $342 for the first seminar and $255 extra for the second.

The seminars will feature many prominent speakers, both local and national. The local papers will be of particular interest, inasmuch as Hawaii is unique in its more or less stable population and ethnic factors, which present opportunities for medical research not found elsewhere in the United States.

Complete details can be secured by writing: Hawaii Medical Seminar, Suite 300, 1612 K Street, Washington, D. C. 20006. A deposit of $100 is required. Reservations will be confirmed in order of their receipt.

The Use of the Computer in Private Hospitals

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THE RESEARCH SCIENTIST is aware of the properties of the digital computer, and has used it routinely in his research efforts for quite a long time. It is only within the last few years, however, that the possible uses of the machine in clinical medicine have become apparent.

The computer has certain properties which make it valuable to the physician in routine hospital practice. It can store a large amount of data and keep it available for instant use. It can process information with speed and accuracy, and it can consider variables far more numerous and complex than the human mind can handle. All of these capabilities can be highly useful.

The cost of digital computer equipment is great. However, most hospitals have considerable needs for computer technics in their administrative and business activities. Preparation of payrolls, handling of accounts receivable, inventory control, and employee work-scheduling are all big and frequently recurring tasks even for a medium-sized hospital, and although they can be handled through manual methods, the use of automatic data processing technics can save time and money, and improve accuracy. Because the same digital computer can be used to handle the business aspects of hospital work, the cost of using it for medical services has become low enough to warrant consideration of this kind of installation in medium-sized hospitals.

The business uses of the computer are all standardized. The requisite operating programs for commercial functions are available, so that it is mainly a matter of converting hospital records to the form required by the particular computer to be used. On the other hand most medical uses are still in the experimental phase, and at the present time considerable programming is necessary for each application of that sort. However, some medical programs have been worked out, and these procedures are available at the present time to any hospital having the proper equipment. It is the purpose of this paper to discuss what is being done at one such hospital.

This is a report of work done at Iowa Methodist Hospital, Des Moines, and Iowa State University, Ames, supported by a grant from the John A. Hartford Foundation, Inc.

SCORING TESTS

One of the more important medical or paramedical uses of data processing methods is the freeing of personnel from tedious, repetitive jobs. The scoring of the Minnesota Multiphasic Personality Inventory is one such task. Rome and his associates at the Mayo Clinic have published a program which not only facilitates the scoring of this personality test, but also provides for a verbal output that is intelligible to the physician who is largely unfamiliar with psychological and psychiatric terminology. This particular test can be scored by hand in 45 minutes to one hour, but the digital computer can do the job in less than a minute. The cost of digital computing is probably around $30 per hour, with the particular equipment applicable to this kind of an installation. Therefore, the cost of scoring an MMPI by computer is less than the cost of scoring it by hand.

The analysis of pulmonary function is a rather simple process, but it requires the technicians to make some calculations, and as a result it is susceptible to certain mistakes. The use of the digital computer reduces the number of errors and does the task considerably faster. It is simpler, indeed, to show a technician how to run the computer than to train a technician to make the necessary calculations required for the pulmonary-function evaluation. It seems likely that within a short period of time we shall have a verbal output of the scoring procedure for pulmonary functions which will be useful to the physician who has had no training in this area. These are two examples of the use of computers to eliminate tedious work by technicians.

The use of computer storage (memory) is an enticing area of research. With the tremendous number of publications now available, the physician is certainly unable to keep up with more than a small fraction of medical literature. Placing needed information in all areas of medical science at the physician's fingertips will certainly be a giant step forward. Work on this is being conducted by the U. S. Public Health Service, but thus far the only field well covered is diabetes. A specific practical application of this sort would be the use of a computer for sorting out the information needed in the diagnosis and treatment of each case

of poisoning. At the present time, each inquiry requires the physician at the poison center to look through any one of a number of texts to find the items of information needed. With computer technics, this work could be accomplished almost instantaneously. A technician would punch the basic question on a card, place it in the computer and thus command the machine to print out all the information relevant to the particular substance involved in the poisoning.

Any physician who has delved into medical records in an effort to get information for a paper has found deficiencies in those records. One or two efforts in this direction are enough to discourage all but the most enthusiastic. Technics for recording all pertinent data from the medical records on data-processing equipment have given us reason to expect that in the future this kind of information will be instantly available without the investigator's having to pore over charts. The lack of standardization in terminology, and variations in the completeness of charts will continue to offer problems in this type of work, however.

THE COMPUTER AS DIAGNOSTIC AID

The use of digital computers in medical diagnosis is certainly the area of interest for the lay person. Contrary to lay opinion, however, the digital computer should not be expected to provide an accurate first diagnosis. It is possible to write computer programs which will elicit an accurate diagnosis, but it is more desirable to write programs which call forth a complete differential. A computer diagnosis indicating an 85 per cent likelihood of a particular diagnosis is not so helpful as the listing of three or more diagnoses, any one of which is possible in the particular case.

In designing a program for computer diagnosis one must keep the user in mind. Warner has demonstrated that the program can be of value to the well trained specialist. If the program is to be used by general practitioners, it does no good to require the computer to provide a vector analysis of the cardiogram. Conversely, the fully trained specialist will have no use for a program that calls upon the machine to furnish only a fraction of the information he can derive from his more expert examination.

Congenital heart disease offers an example. Most university centers have pediatric cardiologists. A computer program would be of value in perhaps no more than 10 to 20 per cent of cases seen by such individuals. However, most cases of congenital heart disease are taken care of by pediatricians, by internists or occasionally by general practitioners. Our studies show that a computer program for congenital heart disease can be of value to these physicians in at least 50 per cent of their cases. The questions which the university pediatric cardiologist wants answered would be complex and difficult to program. A simpler program for congenital heart disease has been written by Warner, and modifications that we have studied based on Lipkin's work can provide basic methods for use in other types of diseases.

Thirty-eight cases were examined by this technic, and checklists from the same group of cases were given to six physicians. The physicians were then asked to list all likely diagnoses in order of probability. The number actually listed varied with the case and with the physician. The results are shown on Table 1. The participating physicians included two pediatric cardiologists holding university appointments, two internists with more than the usual interest in congenital heart disease, a pediatrician, and a cardiac surgeon. The correct diagnoses in 35 of these cases have been confirmed by cardiac catheterization, angiocardiography, surgery, or postmortem examination. The other three cases have been examined repeatedly, and the diagnoses seem certain.

The computer made the correct diagnosis in 63 per cent of the cases, but included the correct diagnosis in its differential in all but one instance. The pediatric cardiologists were equal or superior to the computer on their first diagnoses. But the proper diagnosis was omitted from their differential in 13 to 16 per cent of these cases. Our less well-trained specialists were less accurate in their first diagnoses (36 to 52 per cent correct) and omitted the correct diagnosis from consideration in 24 to 48 per cent of cases.

A diagnostic accuracy of 50 to 75 per cent should not be considered a standard of excellence, but the material available for study in each instance was a checklist, not a patient. The data had not been collected from each patient by expert observers, but had been derived from analyses of hospital records. The pediatric cardiologist collecting and examining his own histories, physical examinations, EKG's, and x-ray data would have made

TABLE 1

	Correct Diagnosis as First Choice (per cent)	Correct Diagnosis as Second Choice (per cent)	Correct Diagnosis Mentioned in Differential (per cent)	Not Mentioned (per cent)	Average Score
Computer	63	16	18	3	2.39
Cardiologist A ..	56	20	8	16	2.16
Cardiologist B ...	74	5	8	13	2.39
Physician C	36	32	4	28	1.75
Physician D	52	4	18	26	1.96
Physician E	36	12	28	24	1.57
Physician F	48	0	4	48	1.48

The average score is computed by counting three points for each correct first choice, two points for each correct second choice, and one point if correct diagnosis was mentioned in differential. The total is added and divided by the number of cases examined.

the correct diagnosis in over 90 per cent of these patients. The other physicians would also have improved their scores, but not to the same extent. But with better collection of data, the computer would also have improved its score, as Warner showed. The checklist is not complete. Degrees of abnormality of electrocardiographic and x-ray data are not programmed. The expert uses this type of information, but the less well-trained physician cannot.

The checklist can be of use to the examining physician. By pointing out the specific information needed, it can prompt him to be complete. Furthermore, it sometimes will demonstrate the lack of value of items usually reported.

Because the physician is not accustomed to making diagnoses from checklists, nine cases of varying difficulty, in the series, were written up in narrative form, and these were then given to the four physicians. The computer's and physicians' results are shown on Table 2. The lumped results show slight differences between the performances of the physicians working from data presented to them in a checklist and in narrative form. One internist improved considerably, but the second internist was noticeably worse with the narrative form.

Although the physicians all had more than the usual interest in congenital heart disease, their actual practice in this field is limited. Most internists and pediatricians don't see more than one or two cases of congenital heart disease a month, whereas there are at least 35-40 types to identify.

INTERPRETATION OF ELECTROCARDIOGRAM

Pediatricians routinely order electrocardiograms, but, except at university hospitals, these cardiograms are usually interpreted by cardiologists unfamiliar with pediatric cardiology. As a result, the interpretation cannot be used to its maximum benefit. The normal values of various measurements in a child's electrocardiogram vary greatly, depending upon the age of the child. A heart rate of 130/min. is normal for a 3-month-old child, is borderline for a 2-year-old, and is abnormal for a 10-year-old. The P-R interval depends upon the heart rate, but depends even more on the age of the child. A P-R interval of 0.16 sec. is abnormal in a 6-month-old with a heart rate of 130, but is well within normal limits for a 6-year-old with a heart rate of 80. The measurement of the Q-T interval is not done routinely. To be of value it should be divided by the square root of the time required for one complete cardiac cycle. All of these items can be interpreted accurately through the use of tables. As a matter of practice, because of lack of time, or inconvenience, or lack of interest, the tables are not used routinely.

TABLE 2

	Correct Diagnosis as First Choice (per cent)	Correct Diagnosis as Second Choice (per cent)	Correct Diagnosis Mentioned in Differential (per cent)	Not Mentioned (per cent)	Average Score
Four Physicians					
Checklist	36	11	17	36	1.47
Narrative	31	19	14	36	1.44
Computer					
Checklist	44	11	33	11	1.89

These comparisons are based on nine cases. The average score is computed by counting three points for each correct first choice, two points for each correct second choice, and one point if correct diagnosis was mentioned in differential. Total is added and divided by number of cases examined.

Criteria for hypertrophy in children are not so easily obtained nor so completely accepted. At birth, the right and left ventricles are of about equal thickness, and the normal electrocardiogram shows what would be a considerable degree of right hypertrophy by adult standards. These electrocardiographic manifestations of hypertrophy diminish rapidly in some children, and slowly in others.

From the foregoing, it is obvious that a mechanical interpretation of the electrocardiogram would be of value to the practicing physician. Pipberger and Caseres have equipment which will analyze cardiograms recorded on FM tape. It will be possible for them to produce a printed report without a physician's ever seeing the cardiogram or its measured values. However, it is necessary to wait for the use of this equipment to become routine. We can improve our electrocardiographic technics through combining technician measurements and computer testing.

For the last 18 months, every electrocardiogram taken at our 78-bed pediatric hospital has been processed by a computer system, and a printed report has been placed on the patient's chart, usually 24-48 hours before the standard report.

There is no way to prove the accuracy of most of these diagnoses. A number of physicians experienced in pediatric cardiology were asked to examine part or all of the first 192 tracings for ventricular hypertrophy. It was no surprise to find considerable differences of opinion among these examiners, but general agreement was present in enough of the cases to check the computer program.

Out of the 192 cases, there were 16 cases where the computer differed significantly from the majority of the examiners. In 10 of these, the final hospital diagnosis was such that the computer and minority opinion were not clearly wrong. On the basis of three tracings on two patients with known heart disease and ventricular hypertrophy, the computer failed to indicate the presence of any hypertrophy. On one of these tracings, two

examiners also failed to recognize a hypertrophy pattern. Review of the three cases that the computer missed indicated deficiencies in the program that have now been corrected.

In three cases, the examiners and the computer agreed that left ventricular hypertrophy was present, and the computer findings indicated the presence of a right hypertrophy which was not mentioned by any of the examiners. All three of these tracings were on patients with lesions that usually produce some degree of right hypertrophy, and in two of the cases there has subsequently been postmortem confirmation.

The only definite drawbacks noted are the lack of universally accepted standards and the method of measurement.

With the development of an economical method of measuring electrocardiograms electronically, this type of analysis will become more practical.

At present, we feel that this somewhat cumbersome technic has certain definite values. We are satisfied that it can give valuable assistance to the electrocardiographer who is unfamiliar with pediatric standards. It will standardize the readings, and though standardization is not necessarily desirable, in many places it will improve the interpretation. Reprogramming the computer as new information becomes available is probably easier than reeducating the interpreter.

It is likely that more information can be derived because certain measurements and calculations are done routinely.

The routine transcription of data to punch cards will allow more complete analysis of the various components of the electrocardiogram and will permit more accurate interpretation subsequently.

CONCLUSION

It is my belief that in the next few years the digital computer will be used routinely in almost all hospitals of over 100-200 beds.

I believe it will take many years before we realize the total value of the medical applications of the digital computer.

The digital computer will not replace the physician, any more than x-rays or laboratory procedures have replaced him, but it will give him assistance.

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Iowa Methodist Hospital

Clinical Pathologic Conference

CLINICAL SUMMARY

THE MOTHER OF THE INFANT who is the subject for this conference was an 18-year-old primigravida whose estimated date of delivery had been October 21, 1963. Her prenatal serology was negative and she was Rh positive. Her pregnancy had been uneventful until September 9 when she possibly started to leak amniotic fluid. She went into spontaneous labor on September 11. The labor was uncomplicated, and after a total first stage of seven hours and a second stage of 44 minutes, a live, vigorous female infant was delivered under saddle-block anesthesia. The baby had a lusty cry and at the end of one minute had a total Apgar score of 10. She weighed 5 lbs. 9½ oz., and was 18½ inches long.

When she was examined in the nursery, shortly following delivery, no abnormalities were detected. In the nursery she seemed to be progressing normally until 9-13-63, when she was found to be slightly jaundiced. Apparently she was otherwise well.

On 9-15-63, for the first time, the baby was noted to be listless in addition to being jaundiced. The temperature was 97.4° F., the weight was 5 lbs. 2½ oz., and the stools were normal. Physical examination was unrevealing, except for the listlessness. On that day a total hemoglobin was 18.4 Gm. per cent, the red blood cell count 6.23 million/cu. mm., and the white blood cell count 9,300/cu. mm. The differential count showed 45 per cent neutrophils, 6 per cent band cells, 28 per cent lymphocytes, 11 per cent monocytes, 1 per cent eosinophils, and 9 per cent metamyelocytes. Twenty nucleated red blood cells per 100 white blood cells were present in the smear. The total bilirubin was 14.5 mg. per

cent, and the direct bilirubin was 1.7 mg. per cent. Throat culture revealed a light growth of alpha Streptococci. A blood culture drawn on that day was reported as showing no growth after three days.

On 9-16-63 the infant was transferred to Raymond Blank Memorial Hospital. On her arrival, her temperature was 99.4° F., her pulse rate was 140/min., her respirations were 20/min. and regular, and her weight was 5 lbs. 4 oz. On that day the baby bled easily from needle puncture sites, and continued to be listless. Therapy was started with procaine penicillin and Terramycin. Urine culture showed a moderate growth of Escherichia intermedium.

On 9-17-63 the hemoglobin was 15.1 Gm. per cent, and the white count 13,900/cu. mm., with a differential count essentially similar to that previously described. Eight nucleated RBC/100 WBC were present. The total bilirubin was 16.4 mg. per cent, and the direct bilirubin was 5.2 mg. per cent. During all this time, the baby was taking her feedings quite adequately, although she continued to be listless.

By the evening of 9-18 the baby did not suck well and appeared to be very flaccid. By 10 p.m., she still refused to eat, was still flaccid, and had developed respiratory distress. She failed to improve, and was pronounced dead at 12:40 a.m. on 9-19-63.

CLINICAL DISCUSSION

Dr. Lee Forrest Hill: It is my task to discuss some of the possible causes for the illness and death of this infant. Since jaundice was a prominent feature in the case, and since jaundice lends itself very well to differential diagnosis by exclusion, I should like to take a few minutes to run down some of the causes that account for jaundice in the newborn.

Familial hemolytic anemia or spherocytosis is a very rare one, and a family history would tell us about that.

A deficiency of glucuronyl transferase enzyme in an immature liver will produce physiologic jaundice and occasionally hyperbilirubinemia. This is the enzyme that is responsible for conjugation of insoluble indirect bilirubin to soluble bilirubin glucuronide. Only a very few full-term infants have bilirubins above the kernicterus-risk level of about 20 mg. per cent. In premature infants, exaggerated physiologic jaundice may be present in 10 to 12 per cent. It makes quite a difference whether you are dealing with a full-term baby or with a premature infant, when you are evaluating the significance of physiologic jaundice. Gilbert's disease is a congenital familial deficiency of glucuronyl transferase, and the people who have it maintain some degree of jaundice throughout most of their lives. Crigler-Najjar syndrome is a similar situation in which there is nearly complete absence of glucuronyl transferase. In this case, the jaundice can be severe enough to cause kernicterus. This is of interest because it gives pretty clear proof that indirect bilirubin can produce kernicterus by itself without any other factors associated with it.

Infections are a cause of jaundice, and there are a good many of them. These include sepsis, syphilis, toxoplasmosis, cytomegalic inclusion disease, herpetic hepatitis, the Coxsackie group of infections, and neonatal hepatitis. The last of these may be due to either homologous serum virus B or infectious hepatitis virus A.

There are certain metabolic diseases associated with jaundice in the newborn. These are galactosemia, Wilson's disease, cystic fibrosis of the pancreas, maternal diabetes, and cretinism.

There are the obstructive causes which include biliary atresia, choledochocyst, and pyloric stenosis.

Enclosed hemorrhage may cause juandice, and this can occur in the brain and in adrenal hemorrhage, resulting in hyperbilirubinemia from destruction of the red blood cells.

A number of drugs that can be administered to the mother or to the infant will compete with the bilirubin in the albumin, thus setting free the bilirubin and causing hyperbilirubinemia. Some of these are sulfa drugs, novobiocin, and the salicylates. Excessive vitamin K, in excess of 10 mg. per cent, will also produce hyperbilirubinemia. An unusual one of these is the Dubin-Johnson syndrome, in which a peculiar kind of pigment can be recognized in the liver of the newborn.

I think it important to point out that hyperbilirubinemia may be augmented by illnesses such as anoxia, respiratory infections, penumonia, and respiratory distress syndrome. There is no doubt that these interfere with the conjugating process that goes on in the liver. The inspissated bile syndrome, which we hear very little about nowadays, used to be very prominent as a result of this mechanism.

Extrinsic biliary obstruction from cysts or other neoplasms is also a cause of jaundice in the newborn.

There are some 25 or 30 of these causes and I hope that maybe hidden somewhere in this group might be some condition related to this infant's illness.

The infant's mother was an 18-year-old primigravida who was Rh positive, and thus we can exclude an Rh incompatibility at once. Since she had a negative serology, we can exclude syphilis. The pregnancy had been normal until September 9, when she possibly had started to leak amniotic fluid. This last, I think, is the first bit of significant information offered us. A rupture of membranes, I think, would have been of great significance in the diagnosis of her baby's subsequent illness. It is quite possible that she might have permitted organisms from her vaginal tract to gain access to the baby and to set up a focus of infection in the baby's lungs, or elsewhere. We are not told whether cultures were made from the amniotic fluid or

whether the cord was examined in a search for information about the possibility of an intrauterine infection. It would have been helpful, but I am sure all of us fail too often to do it. Also, it would be of interest to know whether the mother was given antibiotics when it was noted that her membranes had ruptured. Her receiving drugs of a certain type might have explained why the baby was well for 48 hours after delivery, for there might have been ample drugs in the baby's system to mask or suppress an infection for that length of time.

Congenital pneumonia is a very difficult diagnostic problem and may go completely unrecognized until the baby has died and an autopsy is performed. Congenital pneumonia is acquired *in utero,* and organisms can spread from the lungs to other parts of the body and brain. The absence of fever and of leukocytosis does not rule out congenital pneumonia. In fact, the temperature may be subnormal, and the blood count may be completely normal. Physical findings may be almost entirely absent, and even rales over the lung fields may not be present. So there is nothing in the protocol that I can see that would exclude the possibility that this infant had a congenital pneumonia. Yet I should like to set this possibility aside for the moment, though in doing so I place it rather high up in the list.

Now, the mother delivered on September 11. Since the expected date of delivery had been October 21, it seemed that the baby was about a month and 10 days premature, but we are told that the mother delivered a vigorous female infant that weighed 5 lbs. 9½ oz. and was 18½ inches long. These are not the criteria for premature infants, for they usually weigh no more than 2,500 Gm., or 5 lb. It makes quite a little difference whether we are dealing with a premature infant or a full-term one, because prematures are so much more susceptible to various disturbances than are full-term babies. But, I think we shall have to accept this as a full-term infant.

Now, this baby was vigorous at birth, and nothing abnormal was observed during her first 48 hours of life. Then jaundice was observed on the third day. Jaundice occurring on the third day should always make one think of an ABO incompatibility or of a subgroup incompatibility, but apparently the physicians in charge weren't particularly concerned about this possibility. I would think jaundice appearing on the third day might be due to ABO incompatibility, but I think we can say that certainly with such a difficulty the baby would not have progressed in this fashion, and that kernicterus would have been the cause of death. Therefore, I think that ABO incompatibility, or a subgroup incompatibility can be dismissed as playing a part in the death of the infant.

On the fourth day the infant became listless, in addition to being jaundiced. This I think was the third bit of important information. Listlessness occurring in a previously well baby, whether premature or full-term, is an extremely important finding. It may, for instance, be the only finding which indicates that the baby has meningitis, or that it has sepsis or some other serious type of illness. We are told that the infant's temperature at that time was slightly elevated. We are also told that the baby had lost seven ounces, which is about right on the fourth day of life. We also know that the stools were normal. I presume that the urine color was normal, but it wasn't mentioned. Physical examination on the fourth day of life was said to be unrevealing. No specific mention was made of the size of the liver and spleen. I shall have to assume that they were not enlarged, for otherwise I am sure they would have been mentioned. It does seem a little strange that a baby in whom hyperbilirubinemia was a prominent feature should not have had an enlargement of the liver or spleen, and I think the absence of this phenomenon is significant in ruling out a number of things that I mentioned previously. It might exclude things such as toxoplasmosis and cytomegalic inclusion disease.

The hemoglobin on the fourth day was 18.4 Gm. per cent, and a red cell count was 6.23 million per cu. mm. These are not quite so low as one might expect on the fourth day, but we have to remember that they are within the normal range of variation that one sees in blood counts in babies on the fourth day. At least we can conclude that with a hemoglobin and red count in this range there was no active hemolytic process going on. I think, also, that with blood counts in that range we can probably say that there had been no hemorrhage such as massive subdural hematoma or a hemorrhage into the adrenal glands. A white count of 9,300/cu. mm., which the baby had on the fourth day, is likewise non-diagnostic. A differential count did show 9 per cent band cells, which might be evidence of some degree of toxicity. There were 20 nucleated red cells per 100 white cells, and this, perhaps, was a little higher than is normal on the fourth day. But, it is not high enough, I think, to be of significance. There were 9 per cent metamyelocytes, and these together with the nucleated red cells might suggest that there was a little overactivity of hematopoiesis from the bone marrow or liver. But none of these findings are sufficiently striking to be of any diagnostic interest.

On the fourth day, the bilirubin was 14.5 mg. per cent, 1.7 per cent of which was of the direct variety. Two days later, on the sixth day, the bilirubin had risen to 16.4 and the direct bilirubin to 5.4 mg. per cent. Obviously, the conjugating ability of the liver was reasonably active, as shown by the latter. I think we have to give some logical explanation for a bilirubin elevation of this degree. There are several possibilities. In the first place, it could have been due to an ABO or subgroup incompatibility, of which I spoke earlier. I have already stated that the baby obviously did not run the course of kernicterus, so we can dismiss that. It could well have been due to simple physiologic jaundice secondary to liver immaturity and temporary deficiency of the conjugating enzyme, glu-

curonyl transferase. In full-term infants, the usual peak level of bilirubin is around 12 mg. per cent, but in prematures it may be as high as 15 mg. per cent. In premature infants, the incidence of hyperbilirubinemia is from 10 to 12 per cent. In hyperbilirubinemia caused by immaturity of the liver, deaths from kernicterus do occur, but in full-term infants with simple exaggerated physiologic jaundice, deaths from kernicterus have been extremely rare. There is nothing here that would tell me that this bilirubin elevation was on any basis other than physiologic jaundice. Although it was a little high for a full-term baby, it would not have been too high, perhaps, for a premature baby.

Now, the second possibility is that illness might have exaggerated normal physiologic jaundice to the levels that we have been given here. There is also a possibility that drugs given either to the mother or to the baby may have exaggerated normal physiologic jaundice. We have no information on that point.

There are a few other causes of jaundice that might be applicable to the case under discussion. I have already spoken of an enclosed hemorrhage, such as a subdural hematoma or a massive adrenal hemorrhage, that could account for hyperbilirubinemia of this type. I don't think this baby could have had an adrenal hemorrhage. The clinical course of this illness was not that of adrenal hemorrhage. These babies are cyanotic, they are usually in shock, and electrolytes are abnormal. We do not have sodium, chlorides, and potassium, but I don't think that the physicians felt that the symptomatology was anything like that of adrenal hemorrhage. I do not believe that this could have been subdural hemorrhage with the type of delivery that has been described, and with an infant who was normal for 48 hours, it would seem unlikely.

Thus I am left with a long list of causes of jaundice in the newborn which seem best to fit with the data available in the protocol. This baby, I think, is most likely to have had some type of bacterial infection. I think it probably was not staphylococcal. Rather I think it was caused by one of the coliform bacillus group, and I have already put aside congenital pneumonia as a distinct possibility. Now, let me consider some of the other infections. Syphilis, we can exclude. Toxoplasmosis and cytomegalic inclusion body disease are possibilities. They are usually associated with an enlarged liver and spleen, and with jaundice. To exclude toxoplasmosis, we should need an x-ray of the skull which did not show calcification, and we should need to know whether there was chorioretinitis, and we might have to do a Sabin dye test to exclude it completely. Cytomegalic inclusion disease requires the presence of intranuclear inclusion bodies in the epithelial cells in the urine. Since apparently the physicians in attendance were satisfied that neither of these was present, we do not have that information. In its absence, I would have to dismiss both toxoplasmosis and cytomegalic inclusion body disease.

The viral infections such as herpetic hepatitis, neonatal hepatitis, and Coxsackie viral infections are rather remote possibilities, and I shall take only a moment to talk about them. We do not know whether the mother had had a transfusion or not, and we do not know whether she had had an attack of infectious hepatitis in the latter part of her pregnancy. But, again, the absence of acholic stools, the normal urine, and a liver which was not enlarged probably make the chances of the baby's having one of these types of viral infections quite remote.

Certain drugs that I spoke of earlier, if administered to the mother, can compete with albumin and produce hyperbilirubinemia. We have no information that drugs were administered to the mother. The penicillin and Terramycin administered to the baby were given after the jaundice had begun.

There are several metabolic disorders of the newborn in which jaundice is a part of the clinical picture. One of these, galactosemia, puts a reducing substance into the urine, and none was found in this case. Cystic fibrosis of the pancreas sometimes is associated with involvement of the liver, but in the newborn there usually is meconium ileus. There was no meconium ileus in this baby girl, but since she had no siblings, I cannot definitely rule it in or out. But it is so remote a possiblity that I think it can be dismissed. The mother did not have diabetes, as far as we know, and thus the baby was not jaundiced because of having a diabetic mother. Infants with hypothyroidism may have jaundice, but they usually do not go on to die like this.

I meant to mention earlier that obstructive lesions in the biliary tract such as biliary atresia, choledochocyst, extrinsic masses, annular pancreas, and neoplasm can all be excluded because the stools were normal, and because it would be unusual for jaundice to appear as early as the third day in any of these conditions.

The remaining type of infection left for me to discuss is an acquired bacterial sepsis, and this apparently was what the baby's physician thought was wrong with her. The vital signs were all in the normal range on the fifth day of life, but easy bleeding was noted from the needle puncture sites, and the baby was still listless. This easy bleeding is of some significance since one sees it in sepsis and in severely ill babies. The organisms grown out of the urine culture may or may not have had any significance, since a colony count was not performed. They could possibly have been significant in a baby with sepsis.

By the seventh day of life, the baby was no longer feeling well and appeared to be very flaccid. Now why was this baby flaccid? Did she have some lesion of the central nervous system by that time, or was she pretty near death? Just a few hours before death, she had respiratory distress, and death occurred a couple of hours later, at the very start of the eighth day. I say that this infant's whole course was consistent with bacterial sepsis,

on the basis of the information that is available in the protocol. I see nothing that is inconsistent with it. Whether or not the jaundice first noticed on the third day was due to hemolysis or sepsis, or was simple exaggerated physiologic jaundice in a sick infant, it is impossible to say. The fact that it was higher on the sixth day than on the fourth day, whereas one would expect physiologic jaundice in a full-term infant to be subsiding, leads me to think that a factor of liver immaturity was responsible. Furthermore, the increase in direct bilirubin to 5.2 mg. per cent indicates that the conjugating ability was active.

Newborn infants, whether full-term or premature, are very poorly equipped to deal with bacterial infection. Lethargy appearing very suddenly in a previously healthy infant should always arouse suspicion of an infection. Fever may or may not be present, and the temperature is often below normal. The white blood count may show a leukopenia or a leukocytosis, and often the liver and spleen become large. Lethargy may be the only sign of meningitis in a newborn. Consequently if one expects sepsis, cultures should be made from the spinal fluid as well as from the blood, throat, and urine.

The cause of this baby's death may well have been meningitis, of which the flaccidity was a symptom. There may have been terminal respiratory distress due to some pulmonary complication. My final diagnosis would have to be infection —either congenital pneumonia, with a possible spread from a pulmonary focus, or generalized sepsis which may have involved several organs including the meninges.

Dr. Alexander Ervanian: Are there any questions for Dr. Hill?

Unidentified Physician: Don't you believe that the number of nucleated red blood cells suggests the possibility of hemolytic disease?

Dr. Hill: With a hemoglobin of this level on the fourth day of life, 20 nucleated red blood cells per 100 WBC does not impress me. I doubt that a hemolytic process was present.

Dr. Robert W. Anderson: Assuming that this was sepsis and that amniotic leaking had occurred prior to delivery, should the antibiotics have been started as soon as the baby was born?

Dr. Hill: That is the same, I think, as asking why the obstetrician didn't start antibiotics when rupture of membranes occurred. Antibiotics can cause great difficulty, and I think the consensus is that one ought to have very definite evidence that the baby is infected. Then one can find out what the infecting agent is and use the correct antibiotic. One has no idea of what antibiotic to use and he



Figure 1. Heart showing interstitial myocarditis. H & E (33× mag.).

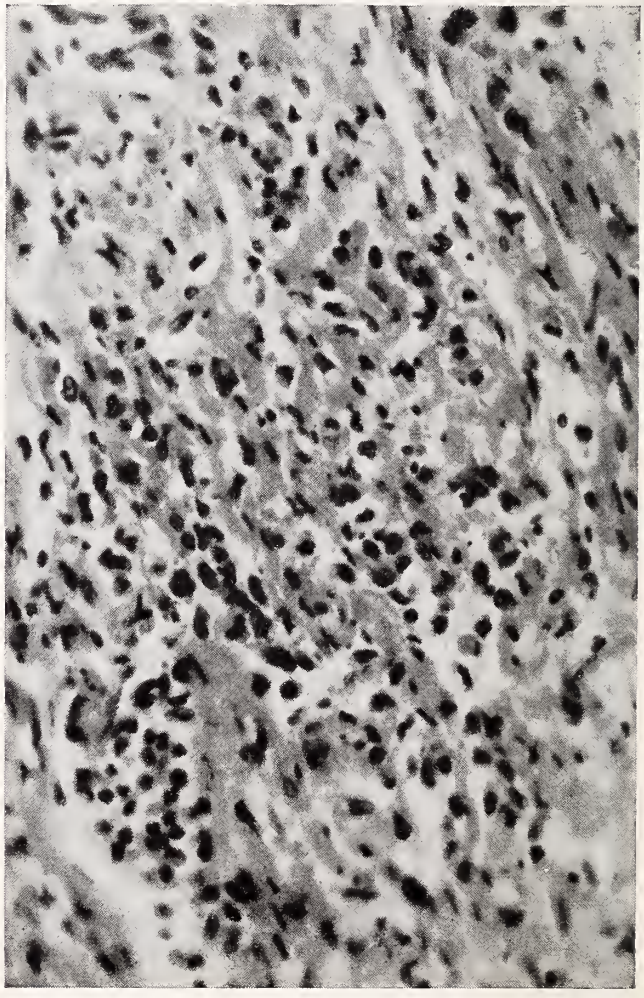


Figure 2. Slightly higher magnification of heart showing details of myocarditis and necrosis (139× mag.).

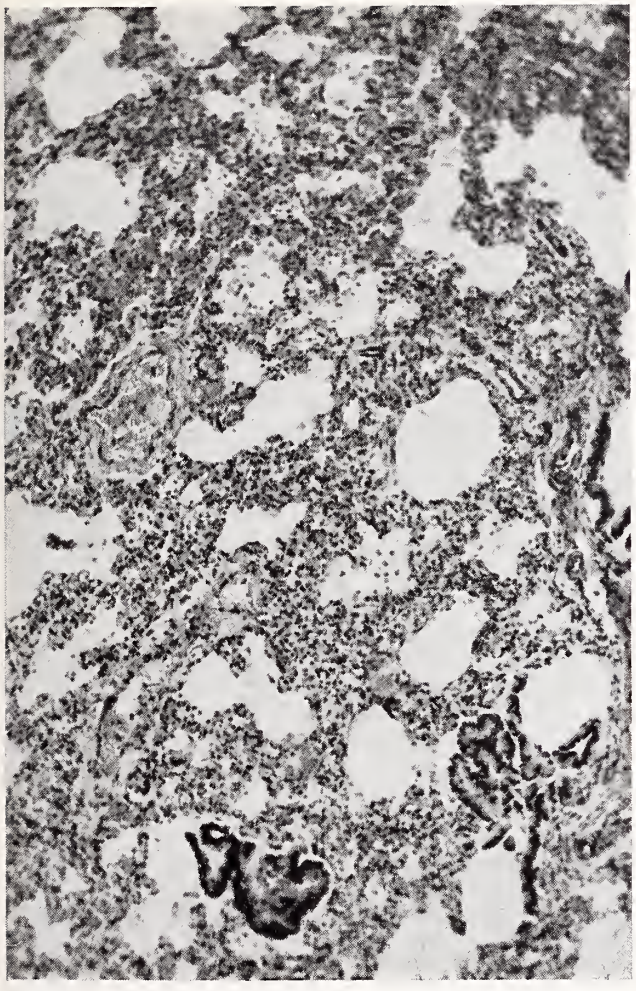


Figure 3. Lung showing interstitial pneumonitis (33× mag.).

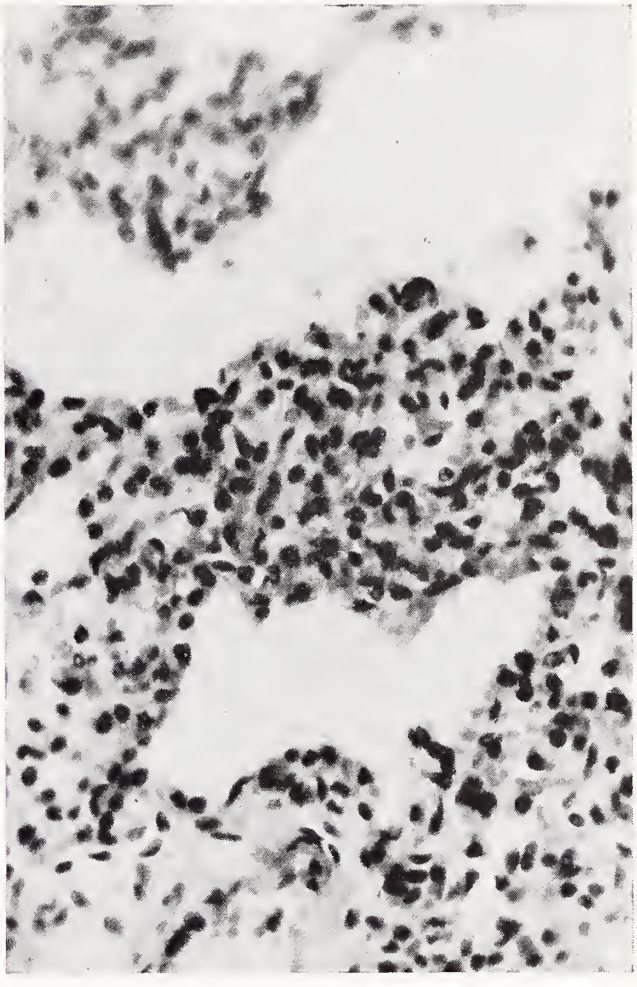


Figure 4. Higher magnification of lung showing interstitial pneumonitis (139× mag.).

may be using the wrong one, if he hasn't identified the agent. I think that in the long run one would be much better off waiting to identify the specific infection to be treated.

Dr. Ervanian: There are two further questions here.

Dr. Robert B. Allender: In obstetrics, we feel that giving antibiotics to a mother with ruptured membranes will decrease maternal morbidity and uterine infection, but that it does very little as far as the baby is concerned.

Dr. Parker K. Hughes: I should like to comment on a similar point. Prophylactic antibiotics have been widely employed, but it is now the consensus that until actual infection exists, it is not particularly wise to give them.

CLINICAL DIAGNOSIS

Septicemia.

DR. HILL'S DIAGNOSIS

Bacterial Sepsis with Meningitis.

DISCUSSION OF NECROPSY FINDINGS

Dr. Ervanian: At the time of autopsy, the only definite abnormality was jaundice. The viscera all appeared normal. The heart and lungs were not unusual. The liver and spleen were normal, and the spleen was slightly enlarged. At the time that the autopsy dissection was completed, we had no idea of what was wrong with the baby.

Cultures were taken from blood and lung, and both were subsequently sterile. Examination of the microscopic sections gave the ultimate answer. The sections of kidney showed that a subcapsular nephrogenic zone was still present, and this constituted definite evidence of immaturity in the baby. The sections of the heart (Figures 1 and 2) showed that a definite myocarditis was present. A rather widespread interstitial infiltrate of mononuclear inflammatory cells was present, together with necrosis of fibers. The sections of liver showed a quite severe diffiuse central lobular hemorrhagic necrosis, which was presumably due to severe acute passive congestion of the liver. In retrospect, the severe terminal respiratory distress which developed in the baby seems possibly to have been due to the onset of acute congestive heart failure, probably as a result of myocarditis.

In the sections of lung, there was interstitial hemorrhage as well as interstitial infiltration with mononuclear cells (Figures 3 and 4). This was an interstitial pneumonitis which is commonly the result of a viral disease. There was no evidence of bacterial pneumonia.

In the adrenal, the definitive cortex appeared normal, but in the fetal cortex there were multiple areas of necrosis, with mononuclear cell infiltration. The sections of the brain showed multiple foci of necrosis in the medulla (Figures 5 and 6), midbrain, cerebral cortex, and cerebellum (Figure 7). In addition, the cerebellum had a definite infiltration of mononuclear cells in the meninges, indicating that meningitis was present (Figure 8).

In summary, this baby had meningo-encephalitis, interstitial myocarditis, necrosis in the adrenal cortex, interstitial pneumonitis, and severe acute passive congestion of the liver. The other sections were all essentially negative. Sections of striated muscle, pancreas, the other endocrine organs, gonads, and both submandibular salivary glands were all normal.

It is apparent that this pattern of involvement in a newborn baby with this clinical course is characteristic, if not virtually completely diagnostic of, Coxsackie B virus disease widely disseminated. Types III and IV have both been recorded as causing this identical picture. The Coxsackie viruses are separated into groups A and B, on the basis of the histologic changes caused in suckling mice. The group A Coxsackie viruses cause generalized myopathy in mice, and the group B cause focal myopathy, myocarditis, central nervous system lesions, and lesions in the fat pad and occasionally in other viscera. The pattern of disease in suckling mice is quite similar to that seen in the infant in this case.

In 1952, Stoeber suggested the possibility that Coxsackie virus might be the cause of encephalomyocarditis and epidemic myocarditis in infancy. In 1953 there was an outbreak in a newborn nursery in Victoria, Australia, which was characterized by meningismus, diarrhea, and symptoms of myocarditis. Some of the mothers had mild upper respiratory tract infections. Five babies died and myocarditis was found, but the brains and cords were not examined. No agent was recovered as a result of inoculations in suckling mice.

In 1955, three infants died in a nursery in Southern Rhodesia with symptoms similar to those described. One of them died with convulsions. Myocarditis was found at autopsy, and Coxsackie group B, type IV was recovered from inoculated mice.

In 1956, Javett, *et al.*, reported an outbreak which involved 10 babies in a nursery. The symptoms were similar to those exhibited by the baby in this case. Six of the 10 babies died, and in these babies there was myocarditis, interstitial pneumonitis, meningitis and encephalitis, and adrenal cortical hemorrhage as well as other minor chang-

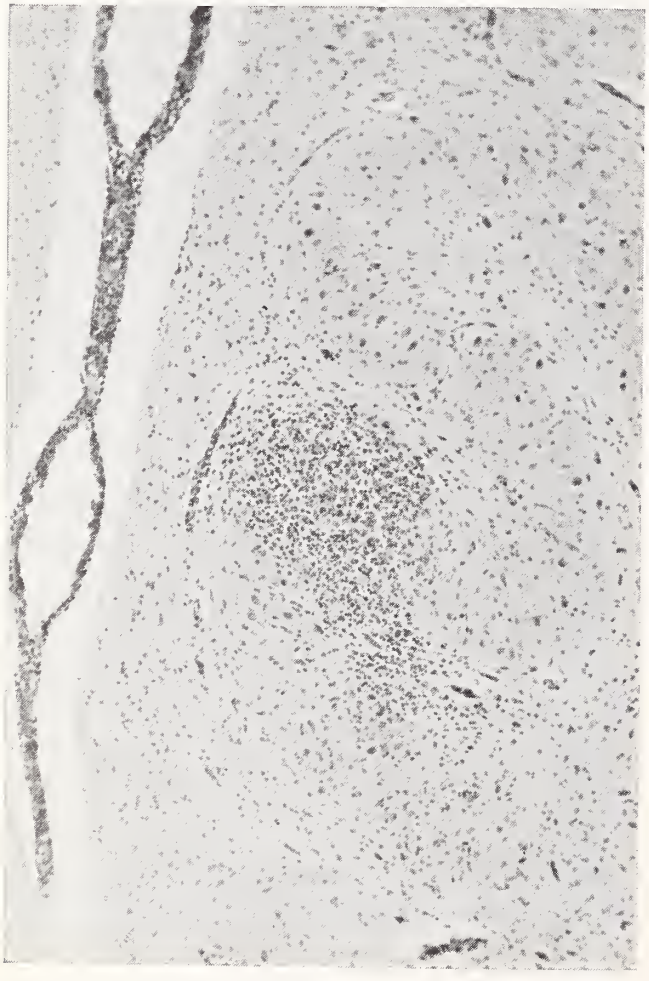


Figure 5. Medulla showing focal necrosis and mononuclear cell infiltration (33 × mag.).

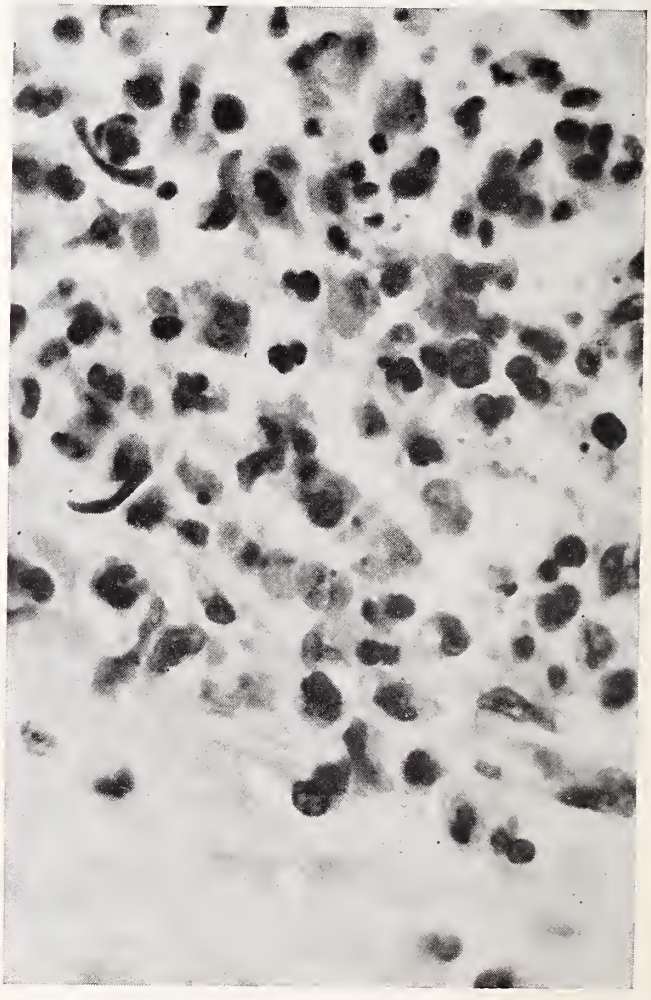


Figure 6. Higher magnification of focus of necrosis in medulla (323 × mag.).



Figure 7. Similar focus of necrosis in cerebellum. Also note the inflammatory cell infiltration in the meninges (33× mag.).

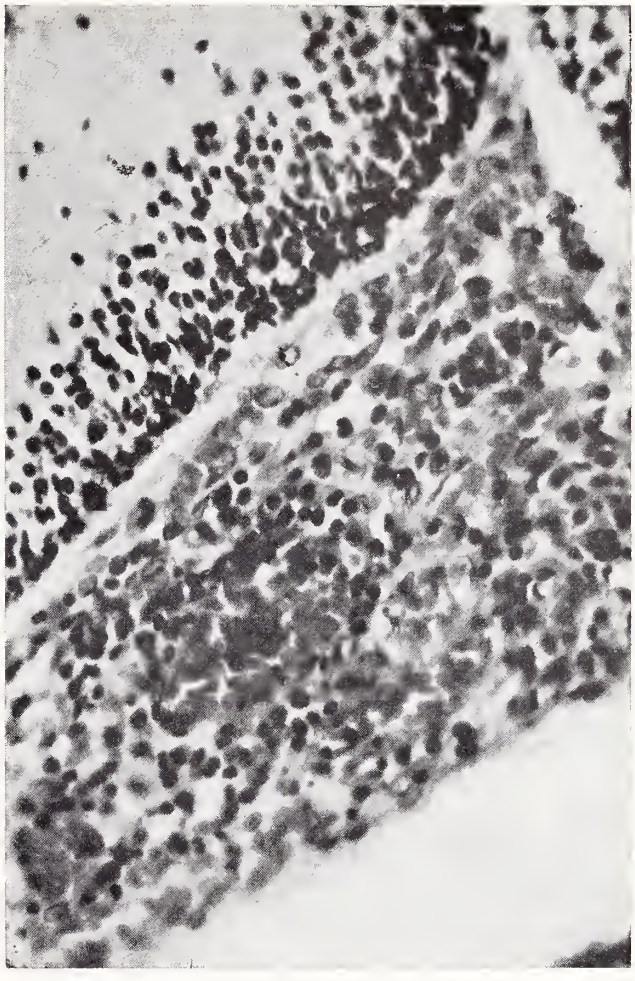


Figure 8. Higher magnification of cerebellum to show the meningitis (139× mag.).

es. There was a concomitant epidemic of Bornholm's disease in the population. Group B, type III Coxsackie virus was identified in some of the cases, and all were presumed to have been caused by this agent. In 1956, Kibrick and Benirschke reported the first case in this country and identified group B, type III Coxsackie virus in the affected infant. Since that time, many additional cases have been identified, and the entity is now well established.

In a survey of the world literature up through 1958, Drs. Kibrick and Benirschke found 25 cases, on 15 of which there had been adequate autopsies. All of the patients had had myocarditis; 67 per cent meningoencephalitis; 67 per cent hepatic necrosis or hepatitis; 57 per cent pancreatitis; and 11 per cent adrenal cortical necrosis. In this same survey, the common symptoms, in diminishing order of frequency, were feeding difficulty, fever, lethargy, signs of cardiac disease, respiratory distress, cyanosis, central nervous system symptoms, hepatosplenomegaly, sudden collapse, diarrhea, jaundice, and hemorrhage. Of those 25 patients, only six had recovered and 19 had died. The time of death had varied between one day and 16 days after the onset of illness, and most deaths had occurred within two to seven days. Twelve of these 25 infants had developed symptoms in the period from birth to seven days of age, and the remainder had developed symptoms in the period from eight to 21 days following birth. Thus we see that the case discussed today was a classical one in all respects.

DISCUSSION

Dr. William C. Riecke: How do you explain the epidemic in the nursery?

Dr. Ervanian: Coxsackie B virus causes Bornholm's disease in adults, as well as mild upper respiratory tract infection and mild fevers of undiagnosable nature. Some cases of aseptic meningitis are also caused by Coxsackie B virus. However, the diseases are rarely fatal in adults, and frequently are quite mild. Sometimes the illness is so mild that it is completely overlooked, and the diagnosis can be made accurately only by inoculating feces or oropharyngeal secretions into suckling mice or by performing tissue cultures. Determinations of antibody titers can also be performed, and a rise in antibody titer must be demonstrated if the diagnosis is to be conclusive.

In reviewing the literature, one finds that many of the nursery outbreaks may have been caused by an unrecognized illness in attendants. In other cases, it is quite obvious that the disease could have occurred only by transplacental transmission

from the mother. Since many of these cases have been found on the very first day of life, it is apparent that transplacental transmission must take place, and when the mothers are questioned carefully, it becomes apparent that many of them have had a mild upper respiratory or mild febrile illness which they may or may not have recognized.

The incubation period of Coxsackie group B virus disease may be as short as two days. It is quite possible for a baby who received the disease transplacentally to transmit it to other babies in the nursery. It is also possible that an attendant with a mild unrecognized group B Coxsackie illness may transmit it to the babies.

Dr. Hill: By any chance, did you do antibody titers on this mother?

Dr. Ervanian: I have not seen the mother. I went over her chart very carefully, and she was afebrile when she was in the hospital. I have not contacted her attending physician, and I think it might be a good idea to do so. Yet, doing complement fixation or neutralizing antibody titer studies at this stage might not be conclusive because she has had time to recover from her febrile illness, if indeed she had one. Very many people have antibodies to Coxsackie group B virus. In the acute stage, one would have to demonstrate a rise in antibody titers and, at this time, testing of the mother would probably be quite inconclusive.

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Business Firms Cooperate in Medical Research

According to the WALL STREET JOURNAL for April 24, the medical departments of corporations, many of which have installations scattered about the country, have kept records that are proving a tremendous resource to researchers at medical schools, and they are cooperating with the schools in studying them. About half of the 68-million employed persons in America are now working for firms that have full-time medical departments, the newspaper reported, compared with only 35 per cent of the smaller number of employed individuals at the end of World War II.

For statistical studies, company medical records are nearly ideal. Dr. Harry N. Petrakos, medical director for People's Light and Coke Co., Chicago, explained, "In industry, you get healthy patients and follow them until they are 65." At his firm, a fourth of all employees have been with the company for 25 or more years. Moreover, Dr. Samuel L. Andelman, commissioner of the Chicago Board of Health, declared that company medical records are far more accurate and detailed than is information available elsewhere. "You would be amazed," he said, "at how many recent widows haven't the vaguest idea of how much their late husbands smoked, or how much coffee they drank."

Seven years ago, Western Electric Co. joined the University of Illinois for a study of heart disease, hired a full-time epidemiologist, and began last year to feed data on its 150,000 employees into a digital computer. One interesting finding has been "a significant correlation between the use of coffee and the later development of coronary disease." Of course the studies don't show whether drinking 200 cups of coffee or more per month causes heart disease, or whether tension or something like it causes some people to drink large amounts of coffee.

DuPont is furnishing information for, and is cooperating in, no fewer than five investigations, ranging from alcoholism to diabetes. Southern California Edison Company is interesting itself in kidney disease, and a medical director employed jointly by United Artists and Paramount Pictures is analyzing the effects of tranquilizers and pep pills. (Thus far, his findings are contradictory because, he thinks, whether the medication is a tranquilizer, a pep pill or a placebo, the effect seems likely to depend upon what the user desired.)

The West Coast Collaborative Group Study, in which three hospitals and 11 firms, including Lockheed Aircraft Corp., are cooperating, examined 3,500 presumably healthy employees in 1960 to find which of three measurements—personality type, blood-fat level or speed of blood clotting—is the best indication that a man will develop heart disease. In 1963, there were 69 of the original 3,500 who had developed such a condition, and among them a personality type appeared to be the common denominator. Coronary-prone men were those characterized by an enhanced sense of drive, aggressiveness, ambition, competitiveness and time-urgency.

A similar study by DuPont has negated the widely-held belief that top executives are especially susceptible to coronary attacks, because of the heavy responsibilities connected with their jobs. The DuPont findings showed that the executive group had had the lowest annual incidence of strokes, 2.2 per thousand, and that the rate among foremen, clerical workers and hourly-wage earners had been highest, 4 per thousand.



LEE FORREST HILL, M.D.

This issue of the JOURNAL is a tribute to Dr. Lee Forrest Hill, prompted not merely by his attainment of three score and ten, but rather by his unique contribution to medicine in Iowa. It is appropriate for the JOURNAL to accord him this recognition, for he was its editor from 1937 to 1945. The original articles in this issue have been contributed by some of "his boys," men who at various times were residents at Raymond Blank Memorial Hospital for Children, in Des Moines.

Dr. Hill's contribution has been remarkable in that he has combined a busy private practice with an active teaching program in pediatrics at a private hospital. He has worked untiringly to raise the standards of medical care in his community and state, and has preserved the image of the dedicated physician as few other men have succeeded in doing. The New England qualities of absolute integrity, complete fairness and genuine modesty have characterized his relationships with his fellow men.

Dr. Hill has earned the admiration, the respect and the affection of his colleagues, of a host of parents and of countless devoted children. Although he has been honored in national pediatric circles, there is no greater accolade which any man can receive than the high esteem accorded Dr. Hill by the medical profession and the public of the community which he has served so well and so long. It is our hope that this issue of the JOURNAL will be pleasing to him.

THE ART OF MEDICINE

Two recent philosophical contributions on the subject of medical practice should be read by every physician, whether he is in academic medicine, in a specialty or in general practice. The first of them, entitled "Confessions of a Pediatrician," is by John Apley, an outstanding British specialist.* The second is a classic entitled "Caring for the Patient," by Herman L. Blumgart, emeritus professor of medicine at Harvard.** A critical analysis of one's own thinking and procedures can have a salutary effect.

Dr. Apley considers the sins of omission and commission under the headings errors of word, of deed and of thought. He points out that words are the vital link between doctor and doctor, and between doctor and patient, and that what we fail to say, what we do say and how we say it may make the difference between helping and not helping our patients. There is too much use of professional jargon, of the loose phrase and of the inaccurate statement, and too much or too little talk to patient or parent. Even commoner is the failure to listen carefully enough or long enough. Among the errors of deed that Apley emphasizes are the admission of a child to the hospital when the problem could have been handled in the office or in the outpatient department, and the failure to discharge the child as quickly as possible. In the hospital the most frequent errors are over-investigation and overemphasis on investigation. These mistakes not only harm the patient but also undermine the physician's faith in himself. They lead to an insidious, unperceived disorder of doctors—a disease or disuse atrophy of the clinical senses and clinical judgment.

Both inside and outside the hospital, a prevalent error is excess of treatment. The author states that he distrusts textbooks of therapy because they imply that everything should be treated. We are constantly having to relearn that there is no absolutely safe drug—not oxygen, not penicillin and not even water. He quotes a Chinese proverb that should guide the doctor in his use of drugs: "Do not take a hatchet to remove the fly from your friend's forehead."

In the treatment of infections, if all does not go well, one should suspect the diagnosis rather than the antibiotic.

Among errors of thought, one to which many physicians are prone is an exaggerated fear of being caught in a wrong diagnosis. This fear leads to interminable follow-up examinations and repeated over-investigation which are harmful to both patient and doctor. Another common error of thinking is oversimplification, and with it there is a loss of perspective. "Nature appears simple only to the simple," Apley declares. "Nature is complex, and so is Man, in health or in disease."

A classic paragraph is particularly significant, and should influence the physician in his thinking:

"I confess that it is still tempting to isolate the person from the family and community of which he is an inseparable part; to label him a 'patient'; to split him tidily into two (mind and body); and neatly dissect the body into systems, tissues and organs. To overcome this all too persistent naiveté, based on an error which is as much philosophical as medical, I try to cultivate 'the conservative approach,' though with varying success."

He concludes his confessions by saying, "With a determination to find physical causes to explain bodily symptoms, I discovered the whole child."

* Apley, J.: Confessions of pediatrician. LANCET, 2:847-849, (Oct. 26) 1963.

** Blumgart, H. L.: Caring for patient. NEW ENGLAND J. MED., 270:449-456, (Feb. 27) 1964.

Editorials continued...

With reserved eloquence, Blumgart emphasizes the emotional needs of the patient, and the fact that as science progresses and the interests of the investigator become narrower and narrower, the scope of the clinician must become broader and broader. Physicians have been criticized for becoming so engulfed in the science of medicine that they are no longer interested in the patient as a person. In Blumgart's words, "The milk of human kindness has been curdled by molecular biology. . . . A robot generation of milliequivalent practitioners is being produced. . . . Without scientific knowledge, a compassionate wish to serve mankind's health is meaningless. But scientific knowledge without wisdom is a frozen storehouse."

He points out that in the physician-patient relationship it is important that the doctor possess an emotional appreciation of the patient's feelings, without becoming engulfed by them. "Neutral empathy" or "compassionate detachment" are accurately descriptive and have an accurate connotation. With this approach to the patient, the doctor will have attained the necessary freedom to act for the patient's greater benefit. For the physician to function in this manner demands inner security, full knowledge of himself, and complete self-acceptance.

Something not fully appreciated by the practitioner is that each illness constitutes an emotional crisis for the patient, and that his eventual return to health depends not only upon his physical but upon his emotional recovery. The physician must recognize the different needs of his many patients, as determined by their individual personalities, and he must take an interest in each patient as a person, besides demonstrating scientific competence, sound judgment and the ability to make decisions.

Blumgart urges that the patient be permitted to relate his medical history in terms of his own values and concerns. In so doing, he verbalizes the experiences that to him are of the greatest emotional significance. In describing his symptoms, he transfers to the physician the material that constituted his anxiety. Thus in a very real sense he makes his anxieties the doctor's problem rather than his own.

It is emphasized that there can be no organic disease without emotional reverberations, just as there can be no emotional upheavals without bodily repercussions. As the clinical course proceeds, the inevitable anxiety of the patient can be ameliorated by the physician's devotion to him in his loneliness, and by the physician's explanation of the nature of the illness and the rationale of treatment. Such consideration can often make the difference between death and recovery.

Blumgart asserts that too many physicians are prone to regard patients with obvious emotional problems as neurotics, and to refer them to a psychiatrist. By so doing, the doctor abdicates his role as physician, for all medicine is psychosomatic. If serious mistakes are to be avoided, every diagnosis of a psychologic, psychiatric or organic disorder must be made on positive data. There is nothing more dangerous than a diagnosis based on exclusion.

When emotional problems are refractory to treatment, or if they are complex or of ominous portent, the aid of a psychiatrist should be sought. If the skills of psychiatrists are reserved for major problems, they will be more effectively employed.

The author emphasizes that one can rehabilitate patients and successfully abolish their disabling symptoms only in so far as one understands their fears and anxieties. The physician's conduct must be adapted to the specific needs of the particular patient. In general, firmness, deliberateness, kindliness and encouragement are supports of much greater import than the choice of sedative. Other patients may require authoritarian management, and may be disquieted by gentle handling.

With experience, the doctor soon recognizes the querulous patient who uses his numerous complaints to attract attention and to achieve an importance that he can attain in no other way. There are patients in whom multiple subjective complaints are an essential ingredient of their lives, and who require lifelong reassurance. By recognizing this type of individual and by giving him support, an understanding physician can enable him to cope successfully with realities.

Doctors are cautioned that by clothing an illness in unintelligible terminology one only increases the patient's anxiety. If the nature of the illness and its expected course are explained in a kindly tone and in optimistic terms, the patient is comforted. There is no condition so complex that it cannot be explained in simple, intelligible language.

The vast loneliness of the patient who is oppressed by anxiety, fear and uncertainty—the patient who is dying from cancer, for example—is starkly drawn by Dr. Blumgart. There is no single or uniform approach to such a patient, but the underlying guiding principle is for the physician to support the specific needs of the individual patient and to strengthen his particular defenses. No greater solace can be given to some patients than to stand vigil with them as they pass into eternity. Among moments of vast loneliness, there is none more difficult than the long trek to the operating theater, and never is a patient more appreciative of a familiar figure than during that anxious ride and during the moments that precede the loss of consciousness.

Dr. Blumgart concluded his article by urging doctors to increase their skill in dealing with the patient as a human being beset by problems and worries, and to understand the interrelation between the person and the disease. By so doing, the doctor will become a better diagnostician, and what is more important, he will become a better physician. "No physician can ask more of his destiny, nor should he be satisfied with less."

CYSTIC FIBROSIS

The results of the modern management of patients with cystic fibrosis of the pancreas by a comprehensive treatment program in a special treatment center have demonstrated what can be done through a carefully planned and intensive effort. Doershuk and Matthews,* in an excellent article, have reported their experience in the last six years at the Cystic Fibrosis Center of the Babies and Children's Division of University Hospitals, Cleveland.

They report that during the six-year period from 1957 to 1963, a total of 167 patients with cystic fibrosis of the pancreas have been followed for 18 to 72 months, or for an average of 36 months. The first 96 consecutive patients were observed for an average of just over four years. They were extensively studied and were carefully evaluated at three-month intervals. Their average age was 9.2 years, but they varied in age from three to 31 years. A system of grading each patient at the time of the three-month check-up provided material for comparing the initial and the later evaluations.

The results of the comparative studies of the 96 patients revealed improvement in 82 per cent; no change in 10 per cent; progression of the disease in 4 per cent; and death in 4 per cent. All but one of the 69 school-age children who survived are attending school regularly, and during the 1960-1961 school year they were absent an average of only 7.4 days because of illness, in contrast to an average of 9.6 days for their normal brothers and sisters. During the whole period of follow-up, which averaged four years, only 29 of the 96 patients required hospitalization.

Before July, 1957, when the special clinic for cystic fibrosis was established, the annual mortality from the disease had varied widely from year to year, but in the five years from July, 1952, through June, 1957, there had been 19 deaths among the 76 cystic fibrosis patients admitted, for an overall mortality rate of exactly 25 per cent. In the six years since the start of the clinic, the overall mortality rate has been just 3 per cent during a follow-up period that averaged 49 months, or about 1 per cent per year! Each patient who died had had extensive pulmonary disease when admitted to the study. Among 241 consecutive patients cared for from July, 1957, through June, 1963, only one death occurred in children under five years of age. This is in contrast with the reported statistics from the entire nation for 1960 through 1961, which revealed that 29 per cent of the deaths from cystic fibrosis occurred in infants under one year of age, and that 26 per cent occurred in the age group from one through four years.

These results were accomplished by therapy directed at three important aspects of the disease: (1) the primary obstructive pulmonary lesion; (2) the secondary pulmonary infection; and (3) the pancreatic exocrine defect and the resultant nutritional deficiency. The degree of involvement varied from patient to patient, and thus therapy had to be individualized. The greatest effort was directed toward preventing the progression of pulmonary involvement, since it accounts for most of the morbidity and mortality from the disease.

In cystic fibrosis of the pancreas, the primary pulmonary lesion is the accumulation of a thick layer of viscid mucus in the tracheobronchial tree, which interferes with the normal ciliary activity—the cleansing mechanism that propels mucus toward the pharynx. In addition to the loss of normal ciliary activity, there are dehydration, and irritation and infection of the bronchial lining. As a consequence, the size of the bronchi and bronchioles is reduced, and the volume of air flow is diminished. The lessened cleansing ability and the obstruction by viscid mucus lead to infection and edema of tissues, additional production of mucus and exudate, and further damage to the tracheobronchial tree. Partial obstruction of the bronchi results in patchy areas of emphysema, and complete obstruction of the bronchi results in patchy areas of atelectasis. If these processes proceed unabated, extensive pulmonary damage occurs, with bronchiectasis, and multiple abscesses may form. Recurrent episodes of infection lead to more and more obstruction, increased destruction and greater pulmonary damage.

Combating the primary obstructive pulmonary lesion consists of nebulization therapy to deposit stable particles of water in the terminal bronchioles. It is important that the particles be no smaller than 1 μ, or larger than 10 μ. Propylene glycol in a concentration of 10 per cent is used to prevent evaporation and to stabilize the size of the particles. A compressor is used to produce the mist, and therapy is administered in a mist tent. The Cleveland physicians assert that *all* patients with pulmonary involvement should inhale a dense mist during sleeping hours. This deposit of fine water particles on the mucous membrane moistens and thins out the secretions. At times of active pulmonary infection, it is common to use the mist therapy continuously, both day and night. For patients who show even a minimal amount of pulmonary involvement, the clinic now advises the prophylactic use of the mist tent nightly.

Besides the mist tent, intermittent aerosol therapy is used three or four times a day. The aerosol may contain a decongestant, a bronchodilator, an antibiotic or a mucolytic agent. The routine solution employed in aerosol therapy is an aqueous solution of phenylephrine hydrochloride (⅛ per cent) and propylene glycol (10 per cent) to shrink edematous bronchial mucous membranes. The antibiotic to be employed is chosen on the basis of culture and susceptibility studies.

Coughing and expectoration are encouraged during periods of aerosol therapy, and postural drainage is carried out following each such treatment.

* Doershuk, C. F., and Matthews, L. W.: Current therapy in cystic fibrosis. GP, XXIX:2:92-101, (Feb.) 1964.

Editorials continued...

An experienced physical therapist conducts these sessions in the hospital, and teaches the technic to members of the patient's family. In addition, breathing exercises are used to improve the patient's posture and respiratory efficiency.

Initially, the patient with cystic fibrosis of the pancreas is hospitalized for complete evaluation and intensive pulmonary therapy, and he is kept there until the pulmonary disease is under control. It is during this period of hospitalization that parents are instructed in the nature of the disease and in the rationale and technics of treatment. Antibiotic therapy in the hospital is guided by cultures of sputum or tracheal aspirate. Unfortunately, the commonest organisms are Staphylococcus aureus and Pseudomonas aeruginosa.

The Cleveland group no longer use prophylactic antibiotic therapy after discharging the patient from the hospital because of the frequency with which pathologic flora develop resistance. Instead of continuing prophylactic antibiotic therapy, the patient is seen at four- to six-week intervals, a careful history is taken, an examination is done, and a sputum or throat culture is taken. Antibiotic therapy is then given only if there is an indication for its use, and the choice of agent depends upon the results of sensitivity studies. The drug is used in full therapeutic dosage for two weeks, and if indicated it may be administered for a month or more.

Small infants are given a low-fat, high-protein formula, and solid foods including meat are started at an early age. The therapeutic goal is to improve digestion, and to provide adequate calories and the essential nutritional supplements. Older children are provided a high-protein diet, and are restricted moderately as regards fatty foods. During the summer, added salt helps to prevent heat prostration and the development of shock.

Pancreatic substitution therapy is prescribed if a significant fat-absorption defect is present. It improves the digestion of both fat and protein. The dosage of pancreatin depends upon the degree of defect, and the degree can usually be determined by clinical evaluation, and assessment of the weight gain and the character of the stools. An I^{131}-labeled triolin fat-absorption test is a more accurate method of determining the degree of defect. It is pointed out that the pancreatic-enzyme replacement therapy should be given with and throughout the meal.

The importance of the role of an understanding and well informed physician in the support of the patient and his family is emphasized. During each patient visit, time must be allotted for discussion of the numerous problems which confront the patient and his family.

The authors conclude with the statement: "At present, early recognition and continuous maintenance of good treatment and prophylaxis offer the only hope for a significant decrease in mortality in patients with cystic fibrosis of the pancreas."

THE INSTITUTIONALIZATION OF MONGOLOIDS

A recent report by Kugel *et al.,* from the Department of Pediatrics at the SUI College of Medicine, based on a study made at the Woodward State Hospital and School during the summers of 1961 and 1962,* is interesting and provocative. The investigation was intended to determine the reasons for institutionalizing the mongoloid children there.

The basic plan of the study was (1) by physical examination and scrutiny of medical records to determine the number of patients whose physical condition necessitated hospital care; (2) to determine whether training and educational facilities comparable to those provided at Woodward were available in the child's home community; and (3) by interviews with parents to gain an understanding of the reasons that prompted the fathers and mothers to place their children in a state institution.

As a result of the study, the authors concluded that only two of the 77 children with mongolism at the Woodward State Hospital and School had required hospitalization because of illness at the time of commitment. Both of those had congenital heart disease, and one was in congestive failure. A review of the medical records revealed numerous illness among the mongoloid children—most of them respiratory infections and the acute infectious diseases of childhood—and in the judgment of the investigators, none of those illnesses had been of sufficient seriousness or duration to justify prolonged hospitalization.

In consultation with the director of the Division of Special Education of the State Department of Public Instruction, it was determined that appropriate training and education were available in the communities of residence of 50 of the 77 children. Fourteen children had been admitted because of inadequate educational facilities in their communities.

In interviews with 62 of the 77 sets of parents, it was found that 43 of the children had been placed in the institution upon the advice of the family physician or of a physician called in consultation. Thus a doctor had had at least a very substantial influence in 43 of the 77 decisions. In 29 cases, it was said that the children were admitted solely because of the advice of a physician. Eleven of these 43 children were admitted when they were under one year of age. In the cases of

* Kugel, R. B., Fedge, A., Trembath, J., and Hein, H.: Analysis of reasons for institutionalizing child with mongolism. J. PEDIATRICS, 64:68-74, (Jan.) 1964.

many of the children who had been placed in the institution at older ages, the physician's advice had been given after both the family and he had spent several years in search of an appropriate solution to the problem.

The inability of the family to cope with the problems of a subnormal child in the home was given as the cause for placement by 35 sets of parents. In 15 of these cases it was asserted that the father and mother had been guided by the physician, and in all of these cases the children had been admitted before they reached three years of age. Twenty-eight sets of parents stated that their responsibility for their other children could not be met because of the added burden of a subnormal child in the home. The authors point out that this group of parents had not received a description of the typical life history of a mongoloid child before making their decision regarding institutionalization, and that parents who lack accurate medical knowledge about the natural history of a mongoloid child often exaggerate what they do not know and anticipate dangers that are most unlikely.

Other factors which had influenced parents to place their children at Woodward were economic stress and a lack of any desire to meet the problem. Physicians had played an insignificant part in the decisions of these two categories of parents.

Kugel *et al.* emphasize the role of the physician in influencing parents to seek institutional placement for mongoloid children, thus implying that many Iowa doctors still subscribe to the obsolete concept that adverse effects are to be expected from rearing a child with mongolism in the home. They point out that the pediatric literature of the past decade has contained many articles in support of the antithetical thesis that the child with mongolism *should* be reared in the home and that there is little justification for placing such children in an institution. Furthermore, they quote numerous authorities who have been critical of such institutional placements. One of these has asserted that the inclusion of a subnormal child in the home is beneficial in the majority of instances. Rather than having a deleterious effect upon the other members of the household, they contended that the presence of an abnormal child is actually salutary. Several have alluded to the possibly adverse psychologic effects upon the mother when she has been separated from her subnormal child, but none has speculated about the emotional impact upon the parents and siblings from having a mongoloid child in the home.

The mongoloid child constitutes a serious problem for the parents, the physician and the community. Such a youngster is slow in his physical development and is mentally retarded, usually attaining an I.Q. (Binet) of 30 to 50, and thus being trainable but not ordinarily educable. Such a child is unquestionably better off in his own home, provided that classes for "trainables" are available in the community. In classes for "trainables," children attend for about four hours per day, and are taught simple skills of self-help such as to clothe themselves, to tie their shoe laces and to perform a few basic social skills. Little effort is made to teach them reading or arithmetic. Rather, emphasis is placed upon simple craft work designed merely to keep them occupied. Where such facilities are available, the child usually can continue in school until he is 18 years of age. The "sheltered workshop" is being introduced in several communities to provide employment for these unfortunate individuals after age 18. In other communities, Goodwill Industries offer employment to some of them. These agencies provide supervision, and assign tasks that are within the capabilities of individual employees. Yet the mongoloid—whether child or adult—is inadequate, and requires lifetime care and supervision. He never becomes self-sufficient, and rarely self-supporting.

The S.U.I. investigators' conclusions are persuasive ones, but there are two sides to every coin. The practicing physician is not devoid of sympathy for the subnormal child, and he is fully cognizant of the fact that a child with mongolism is better off growing up in his own home and in his own community than in a state institution. This is particularly true during infancy and early childhood. However the physician of experience is objective and realistic, and the advice he gives to the parents of such a child must of necessity be determined by the individual circumstances. It is the family physician who knows the emotional makeups of the parents, and who is best qualified to assess the probable impact of such a child on the family and to recognize adverse effects. In certain households, the child plays complete havoc, and in others he and the problems he causes are accepted with resignation and dedication. Though such a thing is uncommon, older children with mongolism, in fits of rage, have inflicted serious injuries upon those who have made the greatest sacrifices in their behalf. Society cannot expect parents to keep such children in their homes.

Though many of the reasons for placing the child with mongolism in a state institution may be spurious, there remain certain valid reasons that justify such a recommendation by the family physician. Criticism of the parents or the physician who influences them in arriving at such a decision should be withheld until all of the facts are known, and generalizations are dangerous. Perhaps the first question one should ask himself is, "What would I do if I had such a child?"

President's Page



The physician's aversion to collectivism is often misunderstood. His responsibility is not just with disease, or even with people. He is concerned, in each instance, with an *individual* who has an illness. Each patient and his problem are unique, challenging the creative capacity of the physician.

Prerequisite to creation are freedom, imagination and faith. Government cannot create. It can only regulate, and often stifle—not alone the physician but the patient as well. And suffocation is not always reversible.

Otis D Wolfe

President

THE JOURNAL *Book Shelf*



BOOK REVIEWS

SURGICAL PATHOLOGY, THIRD EDITION, by *Lauren V. Ackerman,* M.D. (St. Louis, C. V. Mosby Co., 1964. $18.75).

Dr. Lauren Ackerman, professor of surgical pathology at Washington University School of Medicine and surgical pathologist for the Medical Center of St. Louis, Missouri, has successfully produced a complete, beautifully illustrated and detailed text on surgical pathology in a single volume.

The third edition is considerably expanded and revised. In this text there is an extremely useful chapter on ultra structure and surgical pathology that presents the general principles of electronmicroscopy used in histopathology in elementary form. Electronmicroscopy and histopathology are correlated throughout the entire book. The illustrations, which are of unusually fine quality, closely follow the text. There are separate chapters on the dermatoses, tumors of the skin, nevi and malignant melanoma, and wound healing, in addition to the standard make-up of systemic considerations of surgical pathology. There are also chapters which deal with arteries, veins, and lymphatics. Complete sections on the central nervous system pathology and on the pathology of the eyes and ocular adnexae are well presented.

The bibliographies throughout the book have been brought up to date and are extremely detailed.

This book is a must for the practicing pathologist, and is enthusiastically recommended to all physicians who are interested in surgical pathology and clinical correlations with surgical pathology.—*John W. Green, Jr.,* M.D.

ELECTROCARDIOGRAPHIC NOTEBOOK, SECOND EDITION, by *M. Irene Ferrer,* M.D. (New York, Harper & Row, 1964. $2.75).

The ELECTROCARDIOGRAPHIC NOTEBOOK by M. Irene Ferrer, M.D., of the College of Physicians and Surgeons, Columbia University, is a unique pocket-sized paperbound volume which certainly crams the basic essentials of electrocardiography into a few pages.

It is valuable as a primer for beginners and is also a handy reference for anyone interpreting electrocardiograms, for it includes certain tables of basic data.

In spite of the compactness of this book, the author manages to include pertinent clinical information that correlates with the findings in the electrocardiogram, thus adding even more value to this practical little volume.

I would therefore recommend this book to both neophytes and veteran electrocardiographers.—*Edward R. Posner, Jr.,* M.D.

MODERN TRENDS IN PLASTIC SURGERY, ed. by *Thomas Gibson* (Washington, D.C., Butterworth Inc., 1964. $14.75).

This newest member of the Modern Trends Series published by Butterworth is edited by Thomas Gibson, F.R.C.S. The contributors selected by him are authorities and outstanding investigators in their respective fields. The editor himself is senior lecturer in tissue transplantation at Glasgow University, and the first chapter in the book gives a comprehensive synopsis of this subject, presaging the future direction of plastic surgery.

I will not attempt to comment on the many excellent chapters by eminent authors which deal with maxillofacial and cosmetic surgery, but will comment briefly on those chapters dealing with specific subjects with which I am most familiar.

A chapter on extensive burns by Jackson deals with the desirability of primary (immediate) debridement and grafting of large areas of deep burn in selected cases—especially burns of children. It is stated that although the mortality rate has not been changed, recovery time is reduced. Indications for grafting are extensive areas of deep burning, especially on the chest or abdomen.

The immediate debridement of burns by abrasion is described by Lorthioir. Superficial dead skin and subcutaneous tissue is mechanically removed with a high speed abrasive wheel powered by a dental motor with a flexible drive shaft. Abrasion transforms the burn into a clean wound, reducing absorption of toxic substances.

McCormack and Entin each have contributed a chapter on the treatment of hand injuries. Both chapters are well-written, concise and valuable references on this important subject. Hueston, whose writings on Dupuytren's contracture are well known, has written an outstanding chapter on hand injuries, in which the importance of conservatism in treatment is stressed.

Generally speaking, this book is well-written and informative. It stresses basic and traditional ideas and technics, but also refers to new and more or less experimental departures. It contains many beautiful and instructive photographs and drawings, and will be a useful addition to the library of any surgeon who wishes to keep abreast of modern trends.—*Julian M. Bruner,* M.D.

CURRENT PEDIATRIC THERAPY, ed. by *Sydney S. Gellis*, M.D. and *Benjamin M. Kagan*, M.D. (Philadelphia, W. B. Saunders Company, 1964. $16.00).

PEDIATRIC THERAPY, ed. by *Harry C. Shirkey* (St. Louis, C. V. Mosby Company, 1964. $16.50).

The prerogative will be exercised in this review of comparing two volumes which concern the same subject.

The editors of each have called upon considerable numbers of contributors for their volumes. Gellis and Kagan use 148, and Shirkey uses 72. In each case, the credentials of the contributors are of high order.

Gellis and Kagan use no photographic illustrations in their text while Shirkey uses many. For the most part, these illustrations lend little to the value of discussion of therapeutics, for diagnostic illustrations are readily available in texts on pediatrics and diagnosis. The presentations vary with the practices of the contributors. I felt that Gellis and Kagan make better use of several opinions in the various fields where controversy exists, and the presentations are less dogmatic. These differences of opinion are of value to the reader, for he can thus evaluate several methods of therapy.

Either of these volumes should prove very valuable to the practitioner in the office and in the department of pediatrics at the hospital. I prefer Gellis and Kagan, but perhaps the prospective purchaser might see both on approval.—*M. E. Alberts*, M.D.

PROGRESS IN NEUROLOGY AND PSYCHIATRY, Volume 18, ed. by *E. A. Spiegel*, M.D. (New York, Grune and Stratton, 1963. $14.75).

This volume, like its predecessors, offers a very adequate survey of work in the related fields of neurology and psychiatry. Because of the vast and varied literature to be covered, many reviewers were necessary. There inevitably is some variance in the quality and point of view from section to section. The bibliographies are extensive and offer the reader the means of quickly identifying original source material to which he then may refer for a fuller study of selected projects or topics.

The organization of this text permits the following divisions: basic sciences (neurologic), neurology, neurosurgery and psychiatry. The emphasis is on the side of the neurologic, but this in part is due to rapid advances being made in biochemical and pharmacologic studies of brain function. New substances and new technics have resulted in an outpouring of reports of investigations, but very few pages indicate advances in therapeutics and even these are not very startling. For the specialist or the practitioner with specific interests, there are sections dealing with such areas as otoneurology, neuro-ophthalmology and pediatric neurology. A short chapter is devoted to psychosurgery, bridging the gap between neurosurgery and psychiatry, but adding little to either.

If the progress in the field of therapeutics for neurologic diseases was a bit disheartening, the same may be said of psychiatry. The great interest in drug therapy has produced many papers but little solid information regarding basic pharmacology and neurophysiology, and little that is new in the understanding or treatment of psychiatric disorders has been published. Advances in "family therapy" and group therapy offer new dimensions to the treatment process as well as to our concepts of psychodynamic relationships.

Books of this type have rather limited value, but do offer the busy reader an easy access to brief comments on pertinent literature and to classified bibliographies. —*Sidney L. Sands*, M.D.

BOOKS RECEIVED

CURRENT THERAPY 1964, ed. by *Howard F. Conn*, M.D. Philadelphia, W. B. Saunders Company, 1964. $13.00).

MODERN TRENDS IN PLASTIC SURGERY, ed. by *Thomas Gibson* (Washington, D. C., Butterworth, Inc., 1964. $14.75).

CANCER OF THE STOMACH, by *William H. ReMine*, M.D., *James T. Priestly*, M.D., *Joseph Berkson*, M.D. (Philadelphia, W. B. Saunders Company, 1964. $11.50).

WHEN AND HOW TO QUIT SMOKING, by *Eustace Chesser*, M.D. (New York, Emerson Books, Inc., 1964. $2.95).

CASE STUDIES IN OBSTETRICS AND GYNECOLOGY, by *F. Jackson Stoddard*, M.D. (Philadelphia, W. B. Saunders Company, 1964. $8.50).

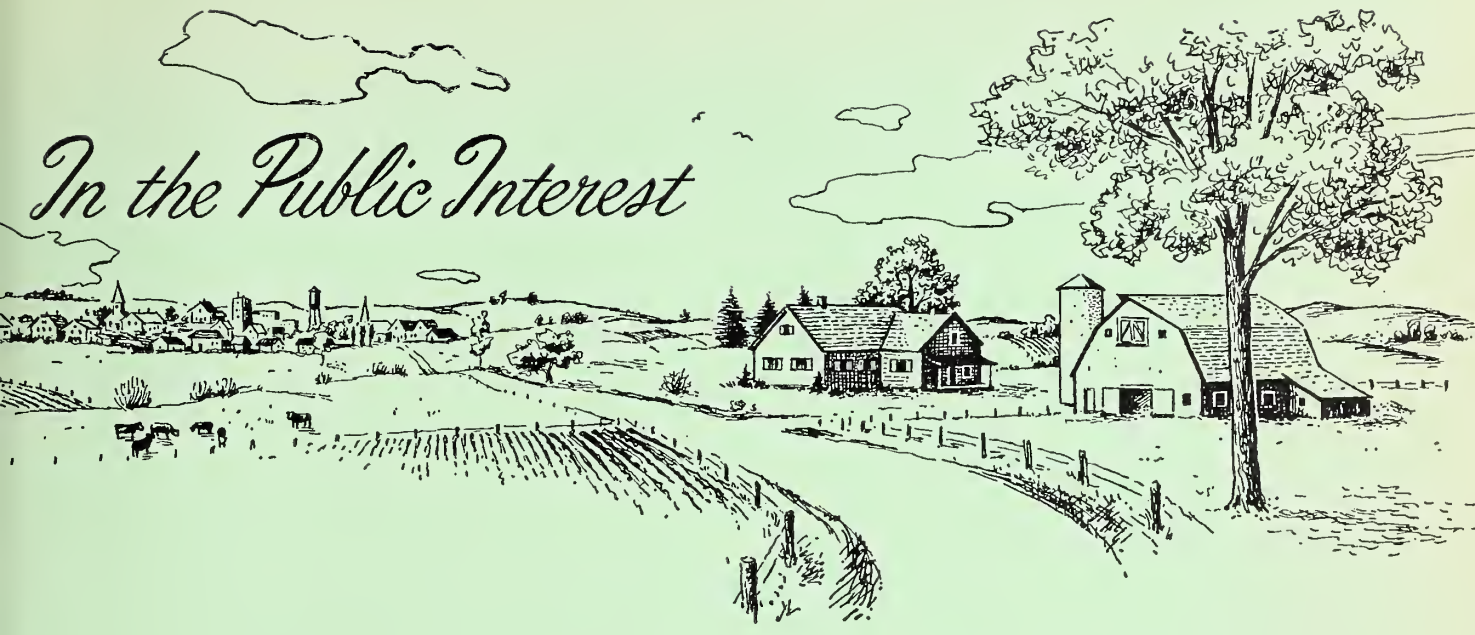
When to End the Diet in Phenylketonuria

If mental retardation is to be prevented, early administration of a special diet is essential in phenylketonuria (a genetic defect in which breakdown products from phenylalanine accumulate in the body and damage the brain). When to stop the special diet is a question that hasn't yet been answered. It has been suggested that a suitable time might be when the growth of the brain ceases. Since the brain attains 90 per cent of the adult size at five years of age, and 95 per cent at 10 years, a guess at 12 to 14 years for cessation of its growth would be reasonable.

Although reports of successfully stopping the diet at a relatively early age have been made, the follow-up in these cases has been of short duration. To make the follow-up observations more meaningful, it has been suggested that an electroencephalograph record be made for each child immediately after the diet is restored to normal.* Comparisons with later EEG records might provide clues to a method for determining when normal diet can be allowed.

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* Moncrieff, A.: When to stop diet in phenylketonuria. DEVELOPMENTAL MEDICINE AND CHILD NEUROLOGY, February, 1964.



The Iowa Interprofessional Association Will Present

A Conference on Quackery at Des Moines

So as to bring the current health-care abuses known collectively as "quackery" to the attention of health workers and civic leaders in Iowa, the Iowa Interprofessional Association will conduct an all-day conference on that subject at the Hotel Fort Des Moines, in Des Moines, on Wednesday, May 27, 1964.

The Iowa Interprofessional Association consists of the professional organizations of doctors of medicine, dentists, pharmacists, hospitals, nurses and veterinarians, and it is receiving assistance in putting on this program from the American Cancer Society, Iowa Division, Inc., the Iowa Dietetic Association, the Iowa Tuberculosis Association, the Iowa Chapter of the Arthritis and Rheumatism Foundation, and the Polk County Chapter of the National Foundation—March of Dimes.

The program is as follows:

9:00 a.m. REGISTRATION

9:30 a.m. "Why Are We Here?"—Mr. Paul H. Keiser, Burlington, administration of the Burlington Hospital, and president of IIA

9:45 a.m. "The Current AMA Campaign Against Quackery in Medicine"—Mr. Oliver Field, Chicago, director of the AMA Department of Investigation

10:15 a.m. "A Look at Chiropractic"—John G. Thomsen, M.D., Des Moines, chairman of the AMA Committee on Medical Quackery, and member of the Executive Council of IIA

10:30 a.m. "Nutritional Quackery"—Martha F. Trulson, D.Sc., Boston, associate professor of nutrition, Harvard University School of Public Health

11:00 a.m. (Topic to be announced)—Mr. Alfred Barnard, Kansas City, Missouri, director, Kansas City District, U. S. Food and Drug Administration

11:30 a.m. "Protecting the Public"—Mr. Evan Hultman, Des Moines, Attorney General for the State of Iowa
PANEL PRESENTATION: How the Professions Protect the Public (The participants will be representatives of the five professional organizations that compose the IIA.)

12:30 p.m. LUNCHEON
"Cancer Quackery, 1964: Mulcting, Chicanery and Charlatanism"—Robert J. Samp, M.D., Madison, assistant professor of surgery, University of Wisconsin College of Medicine, and medical director of the American Cancer Society, Wisconsin Division, Inc.

2:00 p.m. "Arthritis and Rheumatism Quackery"—W. D. Paul, M.D., Iowa City, professor of physical medicine and rehabilitation, State University of Iowa College of Medicine.

2:30 p.m. PANEL DISCUSSION: Communicating on Quackery
Mr. Robert Hudson, Des Moines, classified-advertising manager, DES MOINES REGISTER AND TRIBUNE
Mr. Lowell Nicholas, Des Moines, executive director, Des Moines Better Business Bureau
Mr. Douglas Grant, Waterloo, vice-president

in charge of television operations, Station WMT

3:10 p.m. QUESTIONS AND ANSWERS

3:30 p.m. "A Look Into the Future"—Arthur Long, M.D., Des Moines, Acting Commissioner of Health for the State of Iowa

8:00 p.m. PUBLIC FORUM, sponsored by the Polk County Medical Society (The participants will include several of the guest speakers from the daytime program, plus additional ones.)

As is obvious from the program, the IIA has been almost incredibly successful in getting nationally prominent authorities for this meeting, and since they represent the other health professions, government and education, as well as medicine, they will give their audience a broader picture of quackery than has been presented previously, together with a survey of the efforts that all of them are making to eradicate it.

Quackery is neither so general nor so varied as it was 50 or 100 years ago, during the era of "medicine shows," but it is still an important problem, and there still are numerous ways in which the public is being misled. Principal among these are:

1. "Cures" for diseases that are still medically incurable
2. Machines that do nothing more than dazzle the patient
3. Palliatives that lead patients to postpone seeing a doctor
4. Food fads
5. Dental plates, eyeglasses and other appliances that are attractively inexpensive because those who supply them can't diagnose the abnormalities that are to be corrected and/or fit the devices properly

Abuses of the first of these sorts aren't so numerous as they used to be, for there are fewer invariably fatal diseases nowadays, and fully-qualified physicians are meriting greater and greater degrees of confidence. If detected early enough, many cancers can now be eradicated by either surgery or x-ray. Much the same can be said about diabetes, the venereal diseases and many other ailments. But there still are no cures for fully-developed cancers, for arthritis or for some of the even commoner ailments such as baldness and the common cold. Thus it still is possible for unprincipled people to take advantage of unfortunates for whom no more than relief from pain is possible.

With each new scientific discovery, charlatans are provided an opportunity for hoodwinking the unsophisticated. Following the first development of atomic energy, exhausted uranium mines were touted as health centers. Currently, digital computers are popularly thought capable of answering all problems, and it should surprise no one that formidable-looking machines with impressive panels of blinking lights are claimed to be capable of diagnosing or even curing various ailments. Since nuclear radiation and digital computers have some real uses in medicine, the general public and even most health workers and civic leaders can profit from frequent briefings on what is and what is not quackery in this area.

Perhaps the worst aspect of medical quackery is that it leads patients to postpone seeking expert help. In their advertisements, many manufacturers of patent medicines list symptoms that might fit any of dozens of conditions, then they dutifully admonish those who suffer from those symptoms to consult a doctor, and finally they sing the praises of their products, all of which are avaliable over-the-counter without a prescription. By implying that their nostrums are precisely what the doctor will prescribe, they invite the patient to skip seeing a physician, to take a patent medicine, and to hope for the best. While the patient is taking the pills or syrups, and quite possibly enjoying relief from pain or some other discomfort, the time may elapse when a physician or surgeon could cure him.

Food fads usually are no more than economic foolishness. If one buys seaweed, "organically fertilized" vegetables or other esoteric foods, rather than the ones which crowd the shelves of every supermarket, he is wasting his money, but that's about all. If, however, he eats those products in the expectation that they will relieve him of pain or of some other symptom of disease, he is making a mistake similar to the one committed by the people who rely on patent medicines. Furthermore, it is possible that an unbalanced diet of "health foods" can, paradoxically, *create* a nutritional deficiency!

The exhibits that are to be displayed at the Conference on Quackery in Des Moines will be of particular interest, for they call attention to some dangers of which most of us have been unaware, and summarize the work that is being done to eliminate them. The American Cancer Society, Iowa Division, Inc. will have a display entitled "Cancer Quackery in the United States"; the U. S. Food and Drug Administration will exhibit one showing the federal program for protecting the public against fake remedies and treatment regimens; the AMA will have three exhibits, two of them captioned "Nutritional Nonsense" and the other "Mechanical Quackery"; and almost certainly there will be others.

This Conference on Quackery is sure to be a milestone in Iowa health education.

Highlights of IMS Officers' Meetings

Information contained herein is based on reports and actions of the Executive Council during its March session.

Major Medical Program. As reported to the members of the Executive Council in a letter from the IMS dated January 27, 1964, it was acknowledged that the Board of Directors of Iowa Medical Service (Blue Shield), in session on Sunday, January 26, 1964, in Des Moines, had adopted a motion to hold in abeyance the sale of its major medical contract until after the 1964 annual meeting of the IMS. A Blue Shield liaison delegate also announced that any further discussion or development of the major medical contract will be postponed until after the annual meeting.

MAA Program. It was reported that copies of all the talks that were presented at the MAA Conference for County Medical Society Presidents and County Review Committee Chairmen (February 16, 1964) had been transmitted to all who attended and also to the county society presidents and review-committee chairmen who could not be present. The Council was informed that a special brochure on the operation of the MAA program in Iowa will soon be completed and made available to all county MAA review committees.

The medical consultant to the State Department of Social Welfare explained that the implementation of the program is going well, and that it had been interesting to note that 43 per cent of the applicants had some type of accident and health insurance. He stated that the main criticisms from physicians regarding the program have been in reference to mileage and anesthesiology fees. It was also announced that the Iowa plan had been reviewed and accepted by the U. S. Department of Health, Education and Welfare.

Utilization and Fee Committee. The Executive Council was informed that at its February, 1964, meeting, the Board of Trustees had asked the Executive Council to consider abolishing the Society's Blue Shield Utilization and Fee Committee, which had been authorized by the Executive Council on February 28, 1960, and in its place to establish a State Claims Review Committee, which would adjudicate all disputed claims to which the "usual and customary fee" concept is applicable. It was explained that the physicians who have been appointed to serve on the State MAA Review Committee could constitute the State Claims Review Committee, as suggested by the Board of Trustees.

After considering this matter, the Executive Council approved the abolition of the Blue Shield Utilization and Fee Committee, and the establishment of a State Claims Review Committee, to adjudicate all claims to which the usual and customary fee concept applies, including MAA.

Vaccination Project. The chairman of the IMS Subcommittee on Maternal and Child Health reviewed the Iowa Vaccination Assistance Project. He explained that the Iowa State Department of Health has been awarded a grant to promote immunization in the state. On recommendation by the Subcommittee, the project was approved by the Executive Council. Informational materials regarding this program had been provided to members of the Executive Council in advance of the meeting. The plan includes the following activities:

a. State-wide random sampling surveys to ascertain the current immunization level of the total population by age groups and to determine the specific areas or populations most in need of more intensive services.

b. Specific populations will be selected for initial programming activities. Survey data concerning these populations will be presented to local medical societies, civic groups and other voluntary organizations, and those groups will be asked to cooperate in the development of an intensive immunization program to fit the specific needs of particular communities.

c. Immunizations will be made available to all susceptibles under five years of age in the selected program area, either through physicians' offices, through special clinics conducted in cooperation with the local medical societies or through public clinic facilities.

d. Intensive community awareness programs will be developed prior to and during each community immunization drive, in an effort to motivate the protection of all susceptibles in the community.

e. Post-program surveys will be conducted as soon as practical, in an effort to determine the effectiveness of the program and to delineate possible further activities in the area.

Medical Assistants' Training Program. The chairman of the IMS Medical Assistants' Advisory Committee introduced Elizabeth Kerr, R.N., state supervisor of health occupations, who reviewed a proposal for the establishment of a school to train medical assistants. Informational materials regarding this project had been provided to members of the Executive Council in advance of the meeting. Miss Kerr explained that the purpose of the program is to train high school graduates to assist physicians in their offices. The training program would be 9½ months in length, and would include

courses in business skills, medical terminology, sciences, simple laboratory testing and technics, first aid, etc. In addition, students would receive concurrent clinical training supervised by qualified professional personnel. Miss Kerr stated that the AMA and the American Association of Medical Assistants have approved training programs for medical assistants, in principle.

Following a lengthy discussion, the Executive Council voted to table consideration of this project until more specific information can be obtained from the AMA regarding its attitude toward the establishment of training schools for medical assistants.

Governor's Board of Health Study Committee. The Society's representative on the Governor's Board of Health Study Committee, and the alternate member, presented a progress report on the activities and recommendations of that group. In addition to making recommendations concerning a successor to the late E. G. Zimmerer, M.D., Commissioner of Health (A. P. Long, M.D., San Francisco, California, assumed this position on April 1, 1964) it was explained that the Committee is developing recommendations in reference to the reorganization of the State Board of Health. The thinking, to date, was that M.D.'s and D.O.'s should constitute a majority of the Board, and that the Board's function should be executive, rather than advisory.

Following this report, the Executive Council approved a motion to support the recommendations of the Governor's Committee regarding the composition of the Board of Health, and it deferred action on the other recommendations of the Study Committee.

King-Anderson Legislation. It was reported that the House Ways and Means Committee could be expected to vote on the King-Anderson Bill within the next three weeks, and that a majority of its members will oppose the Bill. The Council was informed that recent polls have failed to indicate extensive support for King-Anderson legislation.

IMS Annual Meeting—April 26-29, 1964. Members of the Executive Council were reminded that the IMS Nominating Committee would meet at 1:30 p.m. on March 22 in the Society's headquarters office, and further, that meetings of the House of Delegates are scheduled at the Savery Hotel at 9 a.m. on Sunday, April 26, and at 8 a.m. on Wednesday, April 29.

AMA Annual Meeting—June 21-25, 1964. It was announced that a reception in honor of D. F. Ward, M.D., the Society's candidate for election to the office of AMA president-elect, will be held from 4 p.m. to 8 p.m. on Wednesday, June 24, in the suite of the IMS president in San Francisco. Ballpoint pens, imprinted with the emblem and name of the IMS, will be available for distribution to AMA delegates and other guests who attend the reception.

The Executive Council approved a motion that its unanimous endorsement and enthusiastic support of Dr. Ward for election to the office of AMA president-elect be reported to the IMS House of Delegates. It was announced that other resolutions supporting Dr. Ward's election have been submitted to the Society for presentation to the House of Delegates, and that following their approval by the House, a letter announcing its action would be sent to all AMA delegates and to appropriate state medical society officials.

Congress on Medicine and Pharmacy. For informational purposes, the chairman of the Judicial Council and the executive director reported on the Congress on Medicine and Pharmacy that was held in Chicago on March 12-13. This meeting had been sponsored by the Commission on Medicine and Pharmacy which includes representatives of the AMA, the American Pharmaceutical Association, and the National Association of Retail Druggists. It was explained that pharmaceutical representatives expressed concern over the trend toward widespread ownership of clinic pharmacies by physicians, and that three states have taken legislative action to prevent investments of this sort—e.g., in California legislation has been enacted which precludes a physician from having a financial interest in a pharmacy; North Dakota has a law which precludes a physician from owning a pharmacy; and in Maryland, it is illegal for a pharmacist to be a hired employee of a physician, dentist or veterinarian.

The Council was told that during a visit with members of the Iowa Pharmaceutical Association who were present at the conference, the IMS representatives were given a copy of a report titled, "The Physician-Owned or Controlled Pharmacy Problem," which would be presented at the Annual Meeting of the I.Ph.A. in April. The report reviews the various actions taken by both the I.Ph.A. and the IMS in reference to this matter, and includes a list of 11 pharmacies owned by physicians in Iowa, and a list of 27 pharmacies located in M.D. clinics or group practices in which the pharmacists are lessees and the M.D.'s are lessors. The I.Ph.A. indicated that the situation in Iowa may provoke the I.Ph.A. to propose legislation concerning physician-owned pharmacies similar to that enacted in other states. However, the IMS representatives explained to those from the I.Ph.A. that precipitous action would not serve the interests of either organization, and that the AMA will undoubtedly take a definitive position regarding this problem, which can be carried out by its constituent state medical societies. The IMS delegates to the AMA have been apprised of these circumstances involving doctor-pharmacist relations, but will attend the AMA meeting, in San Francisco, uninstructed on this subject.

Utilization Study. The chairman of the Committee on Medical Service presented the following

report concerning the status of the hospital utilization survey, conducted by this Committee:

Early in 1962, the IMS Board of Trustees received a request from representatives of the Blue Cross Board to study the area of hospital costs, medical costs, and utilization of these services. This problem was referred to the Subcommittee on Prepayment Medical Care for its consideration, and subsequently a recommendation to explore a joint utilization survey under the auspices of the Iowa Medical Society and Iowa Hospital Association was approved. Later, a joint meeting between representatives of these two organizations was held, and a program for exploring hospital costs, medical costs and utilization of these services was agreed upon.

The 1962 House of Delegates was sympathetic to the recommendation, but considering the possible expenditure of funds, referred the matter to the IMS Board of Trustees. The Board of Trustees suggested that the Subcommittee consider other avenues of approach to this and referred the problem back to the Subcommittee.

The Subcommittee again considered what other approaches might be taken, but did not feel that any other steps would provide the information desired. The Subcommittee therefore reported to the Executive Council and recommended that the original utilization survey, as formulated by the joint committee of the Iowa Hospital Association and Iowa Medical Society, be approved.

The Executive Council did not approve the Subcommittee's recommendation, but suggested that the Subcommittee contact all Iowa hospitals to determine how many hospitals had functioning utilization committees, obtain information from them, and report back to the Executive Council at a future meeting. For the survey, the Subcommittee contacted the Chiefs of Staff of approximately 140 Iowa hospitals. Replies were received from most, but only 10 of those replying indicated they had utilization committees. These hospitals were then contacted by a personal visit from a staff member of the Iowa Medical Society, and a detailed questionnaire on the operation of the utilization committee was completed. A summary of these interviews indicates that of the 10 hospitals, only six have functioning utilization committees. The replies from these six indicate that the information the Executive Council and the Subcommittee hopes to obtain from the survey is not available.

Following this report, the Council was informed that the Committee on Medical Services has recommended that contact be re-established with the Iowa Hospital Association to determine whether it is interested in participating in a survey, as originally agreed upon in 1962.

It was also reported that the Committee on Medical Service recommends carrying out a utilization study by evaluating actual practices in representative hospitals selected by the IMS and IHA; that cases chosen by a preferred random sampling from the records of these hospitals be studied by an IHA auditor for the hospital portion of the charges, and a medical evaluation of the identical cases be carried out either by a physician paid for his services or through a panel of physicians selected by the Iowa Medical Society; and that the combined facts of the study be reported, without identification, to the Board of Trustees of the IMS and to the Board of Directors of the IHA for their recommendations.

The Committee's reasons for recommending this approach were outlined as follows:

1. The just-completed survey of hospital-utilization committees had failed to develop any usable information.
2. The IMS must explore this problem in sufficient depth to determine where problem areas actually exist, before some other organization conducts such a study without adequate medical supervision and completely apart from organized medicine.
3. The medical profession must look beyond the costs of physician's services only, for it is being and will continue to be blamed for *all* costs, whether they be hospital, drug, or other related expenses.
4. An active, working hospital utilization committee can be the most effective of weapons in fighting off pressure from or on behalf of patients for continued hospitalization. The pressure can thus be transferred from the individual physician to the utilization committee.

Following this report, the Executive Council supported the recommendations of the Committee on Medical Service, and requested the Board of Trustees to authorize funds for carrying out this project, and for presenting an informational and progress report regarding this matter to the House of Delegates in April.

Wisconsin Work Week of Health. The chairman of the IMS Committee on State Departments presented an informational report on the Second Wisconsin Work Week of Health, sponsored by the State Medical Society of Wisconsin, February 24-29, 1964. He commented that the majority of persons in attendance were lay people, and he commended the Wisconsin Society for the development of this excellent educational program, which also serves as a worthwhile and successful public relations project.

Conference on Medical Quackery. It was announced that as a result of a recommendation from the IMS Committee on Public Relations, a statewide Conference on Medical Quackery will be sponsored by the Iowa Interprofessional Association on Wednesday, May 27, in Des Moines. Members of the IIA are: Iowa Medical Society, Iowa Dental Association, Iowa Veterinary Medical Association, Iowa Pharmaceutical Association, Iowa Nurses Association and Iowa Hospital Association.

Hawkeye Science Fair. The Executive Council was informed that the Hawkeye Science Fair, which is cosponsored by the IMS, Drake University and DES MOINES REGISTER AND TRIBUNE, would be held at the Veterans Memorial Auditorium in Des Moines, April 10-11. An informational brochure on the Fair was distributed to those in attendance.

Iowa Chapter of the American Academy of General Practice

Spring Postgraduate Conference New Inn, Okoboji, Iowa June 11-13, 1964

The cool, cool breezes of beautiful blue Lake Okoboji will again beckon the family doctors of Iowa when the Fifth Annual Spring Conference is about to convene at the New Inn, Okoboji, Iowa, for three days in June. The dates will be soon after the closing of all schools, a good time for the entire family to share a vacation. Swimming, boating, golfing, fishing and miniature golf are just some of the recreational activities that are available there. Plan now to take your entire family where they may relax while you become more educated. The programs will occupy the mornings only, leaving the afternoons free for you to be with your family. Write the New Inn now for your family reservations.

Following is the scientific program. It has been accredited for 13 hours by the American Academy of General Practice.

Thursday, June 11

HEART DAY

"Cardiac Emergencies in Infants"—Edward Lambert, M.D., Buffalo, N. Y.

"Angiograms—Left Heart Studies"—Peter Vlad, M.D., Iowa City

"Open Heart Surgery for Atrial Septal Defects, Ventricular Septal Defects, and Tetrology of Fallot"—William Myerly, M.D., Des Moines

"An Approach to the Diagnosis of Congenital Heart Disease (Basic & Simplified Approach)"—Dr. Lambert

Friday, June 12

"Management of Atypical or Positive Smears"—Stuart Abel, M.D., Chicago, Ill.

"Fractures of Ankle and Foot"—Robert M. Wray, M.D., Cedar Rapids

"Unstable Diabetes"—C. F. Gastineau, M.D., Rochester, Minn.

"Liver Function Tests"—M. H. Stauffer, M.D., Rochester, Minn.

"Clinical Approach to Intestinal Obstructions"—Virgil Lundquist, M.D., Minneapolis

"Treatment of Skin Cancer and Pre-Cancers"—C. E. Radcliffe, M.D., Iowa City

Saturday, June 13

"Surgical Philosophy"—Dr. Lundquist

"Minimal Invasion in Carcinoma of the Cervix"—Dr. Abel

"Ligamentous Injuries About the Knee"—Dr. Wray

"Prediction of Weight Loss on a Reducing Diet"—Dr. Gastineau

"Infectious Hepatitis"—Dr. Stauffer

" 'Wierdo' Skin Problems"—Dr. Radcliffe

Symposium on Hypertension at Council Bluffs

The Professional Education Committee and the Southwestern Division of the Iowa Heart Association are to present a Symposium on Hypertension, in cooperation with the Pottawattamie County Medical Society, at 1:30 p.m. on Wednesday, May 13, at the Howard Johnson Motel, in Council Bluffs. There will be no registration fee. A panel discussion, and a social hour and dinner will follow the formal presentations.

The lectures and lecturers will be as follows:

"Principles and Goals of Long-Term Antihypertensive Therapy"—Mark L. Armstrong, M.D., clinical associate professor of internal medicine, S.U.I., and, director, Hypertensive Clinic, Veterans Administration Hospital, Iowa City.

"Renin, Angiotensin and Aldosterone"—Frank M. Abboud, M.D., assistant professor of internal medicine, S.U.I.

"New Antihypertensive Drugs"—William R. Wilson, M.D., associate professor of internal medicine, S.U.I.

"Diagnosis and Surgical Treatment of Renal Vascular Hypertension"—Ray W. Gifford, Jr., M.D., Cleveland Clinic.

Iowa Association of Medical Assistants

How Important Is "Important"?

When we reach the point where we no longer have time to do the things we want to do—the things that are expected of us, and the things we MUST do—it is time to stop and take stock. What is important, and just how important is it? Are we letting a time-clock manage our lives, or are we managing our time?

LET'S GET OFF TO A FAST START

Are we ready mentally as well as physically for the day's work? One of Thomas A. Edison's biographers relates that Mr. Edison read the current crop of political and financial jokes every morning before he started work. After he had had a good laugh and a short period of relaxation, he was prepared to begin his daily labors. He had managed to get his spirit "turned over" before assuming any responsibility. Many Presidents of our country have found that a brisk walk each morning is invigorating as well as relaxing. The fresh air and the many changes in nature's face, they have discovered, clear away mental cobwebs.

Perhaps we are bound by convention, and are reluctant to change because people may think us "peculiar." Why be conventional? Using common sense is more important. Have you ever said, "I'm not worth a thing in the morning until I have my cup of coffee!"? Why not change habits, or substitute another habit for the one of thinking you are not effective until later in the day? At bedtime, have your coffeepot all ready to plug in; first thing in the morning, plug it in, take your shower, then have a cup of coffee, and proceed with your before-breakfast routine. Find some specific way of achieving a quick early-morning acceleration, and it will carry you through the day.

DO THE IMPORTANT TASKS FIRST

If the greatest gift in the world is time, then we need to find a way to conserve it, and the fresh start each morning gets us off to a really full day. Do the *important* things first. One task completed gives one such satisfaction that it is easy for him to tackle the next project.

What is important to you may not be important to me, for our jobs are so diversified that we can't lay down a set rule of procedure. However, time and energy are universally important, and conserving them is all-important.

I have found that pulling patient records the first thing in the morning is a waste of time because the schedule changes so much in the first two hours of the day. I was constantly going to the files to pull additional records as appointments were added or changed. Now, I wait until 15 to 20 minutes before appointments start, and then make out all the charge slips, put them in alphabetical order and pull records, without wasting time going from file drawer to file drawer in the order of their appointments. Then I stamp the date on the records and place them in chronological order. This saves me as much as 10 minutes each morning, and also conserves the energy I once used in opening and closing file drawers haphazardly. I return them to the file in the same manner—alphabetically in each drawer of the file. Unconventional? Maybe, but sensible for me.

Intelligent use of time is important. Unless we plan our days and tasks, we shall fail to keep a sufficient reserve of the mental and physical energy that gives us confidence to tackle projects and carry them through to completion. That is why it is essential to attack the most important task first. When we take time for one minor task, we are apt to think of another, and another, and continue postponing the essential piece of work. Unless we plunge into the activity that means the most to us in satisfaction, accomplishment and progress, we have lost the battle. If the job that seems most important to you is the daily correspondence, then start it first. Letters answered immediately are easier to write, are usually more concise, and need not include an explanation or an apology for their tardiness.

LEISURE TIME SHOULD BE PLANNED, TOO

Off-duty time is important too. We need time to relax—to recharge our physical batteries. Some of us find relaxation in reading, knitting, sports participation, civic activity or club work. Again, we should ask ourselves, "What is important?" If we haven't learned to use common sense and the word "NO," we may find our leisure time filled with tasks for which we have no particular interest or liking. If we are not interested in modern art, then common sense should tell us that we should not accept the chairmanship of a committee to sponsor a modern art exhibit. Nor should we continue membership in an organization in whose activites we do not participate. Our mem-

bership benefits are directly proportional to the amount of our participation. And sometimes a slight interest gets us so involved that we find we have no leisure for anything else. Requests or demands on our time snowball. Be objective—take stock again, and ask yourself whether what you you are doing is really THAT important.

CONCLUSION

Nature does not have a "point of no return." It is never too late to change our habits in order to get more out of our hours or energy. Cardiac patients learn to conserve energy, and sometimes accomplish more in a limited time because they have learned how to use their minutes and motions more efficiently. Perhaps they have a lesson to teach us.

In addition to the office "want list," make one for yourself. Evaluate what is important to you. What are your objectives, and are you managing your time so as best to achieve your goals?

HELEN G. HUGHES

Prophylaxis for Juvenile Delinquency

Since it has been shown that it is possible to identify potential delinquents, it was hoped that early detection and treatment would reduce the likelihood of later delinquency and crime. Treatment of the individual child as a basis for preventive programs has failed, however.

Consequently, it is recommended that the whole family be the major target in treatment.* To focus on the family as a unit would involve reorganizing the services—financial aid, housing, etc. —that community agencies provide to multi-problem families. New technics are proposed, including the establishment of "family therapeutic communities." Although the costs would be high, the opportunity for human and financial savings would be enormous.

* Hodges, E. F., Jr., and Tait, C. D.: Follow-up study of potential delinquents. AM. J. PSYCHIATRY, November, 1963.

Coming Meetings

IN STATE

May 7-8	**Iowa Public Health Association,** Hotel Fort Des Moines, Des Moines.
May 13	**Adult and Child Neurology,** State University of Iowa College of Medicine, Iowa City.
May 13	**Symposium on Hypertension,** Howard Johnson Motel, Council Bluffs.

CONTINENTAL U. S. AND CANADA

May 1-2	**Congress on Environmental Health Problems,** Sheraton-Chicago Hotel, Chicago.
May 4-5	**Anabolism and Catabolism in Health and Disease,** Sheraton Hotel, Philadelphia, Pennsylvania.
May 4-6	**Kansas Medical Society,** Jayhawk Hotel, Topeka.
May 4-8	**American Psychiatric Association,** Biltmore Hotel, Los Angeles.
May 5-6	**Association of American Physicians,** Chalfonte-Haddon Hall, Atlantic City.
May 5-15	**International Postgraduate Course in Nasal Surgery,** University of Cincinnati College of Medicine and Christ Hospital, Cincinnati.
May 6-8	**American Association of Genitourinary Surgeons,** Westchester Country Club, Rye, New York.
May 7-9	**Mid-Central States Orthopaedic Society,** Continental Denver, Denver.
May 7-9	**Society of Neurological Surgeons,** Rochester, Minnesota.
May 9	**Shock, Pathogenesis and Treatment,** University of Kansas Medical Center, Kansas City, Kansas.
May 9-14	**American Proctologic Society and the Section of Proctology of the Royal Society of Medicine,** Bellevue Stratford Hotel, Philadelphia.
May 11-12	**Surgery and Trauma,** University of Nebraska College of Medicine, Omaha.
May 11-14	**Aerospace Medical Association,** Americana Hotel, Miami Beach.
May 11-14	**American Urological Association,** Penn-Sheraton Hotel, Pittsburgh.
May 11-15	**Clinical Auscultation of the Heart,** Georgetown University Hospital, Washington, D. C.
May 13-16	**American Association of Plastic Surgeons,** Drake Hotel, Chicago.
May 17-21	**Illinois State Medical Society,** Sherman House, Chicago.
May 17-22	**American College of Obstetricians and Gynecologists,** Americana Hotel, Bal Harbour, Florida.
May 18-20	**Minnesota State Medical Association,** Kahler Hotel, Rochester, Minnesota.
May 20-21	**Clinical Advances in Medicine and Pediatrics,** University of Missouri Medical Center, Columbia.
May 21-22	**Annual Colorado Intern-Resident Clinic,** University of Colorado Medical Center, Denver.
May 22-23	**Chicago Ophthalmological Society,** Drake Hotel, Chicago.
May 24-27	**American Thoracic Society,** Statler Hilton Hotel, New York.
May 25-27	**American Gynecological Society,** Homestead Hotel, Hot Springs, Virginia.

May 25-27 **American Thoracic Society,** Statler Hotel, New York.

May 25-29 **The Medical Care of the Adolescent,** The Children's Hospital Medical Center, Boston.

May 25-29 **Western Cardiac Conference,** University of Colorado Medical Center, Denver.

May 27-28 **Allergy and Immunology,** University of Nebraska College of Medicine, Omaha.

May 28-30 **American Ophthalmological Society,** Homestead Hotel, Hot Springs, Virginia.

June 1-5 **Recent Advances in Clinical Nutrition,** Lemuel Shattuck Hospital, Boston.

June 8-9 **Rural Problems of Poisoning and Intoxication,** University of Nebraska College of Medicine, Omaha.

June 8-12 **Recent Progress in Endocrinology,** University of Washington School of Medicine, Seattle.

June 8-20 **Histochemistry,** University of Kansas Medical Center, Kansas City, Kansas.

June 14-19 **Interamerican Congress of Cardiology,** Montreal. Info: Jonathan Ballon, M.D., 2052 St. Catherine St. W., Suite 114, Montreal 25.

June 14-20 **Traineeship in Obstetrics and Gynecology,** University of Nebraska College of Medicine, Omaha.

June 14-20 **Traineeship in Surgery (traineeships restricted to physicians in general practice),** University of Nebraska College of Medicine, Omaha.

June 15-17 **American Neurological Association,** Claridge Hotel, Atlantic City.

June 15-19 **Psychiatry for the Internist,** University of Maryland School of Medicine, Baltimore.

June 17-19 **Arthritis and Rheumatic Diseases,** University of Colorado Medical Center, Denver.

June 18-19 **American Pediatric Society,** Olympic Western Hotel, Seattle.

June 18-21 **American Therapeutic Society,** St. Francis Hotel, San Francisco.

June 18-22 **American College of Chest Physicians,** Jack Tar Hotel, San Francisco.

June 21-25 **American Medical Association,** Fairmont and Mark Hopkins Hotels and Civic Auditorium, San Francisco.

ABROAD

May 3-8 **American Otorhinologic Society for Plastic Surgery.** West End, Bahama Islands. Sec.-Treas.: Joseph G. Gilbert, M.D., 75 Barberry Lane, Roslyn Heights, N. Y.

May 10-14 **Asian-Pacific Congress of Cardiology.** Kyoto, Japan. Info: Magoiiro Maekawa, Kyoto University Hospital, Sakyo-ku Kyoto.

May 11-14 **American Psychiatric Association and Mexican Society of Neurology and Psychiatry.** Mexico City. Info: H. J. Tompkins, M.D., 144 W. 12th Street, New York 11.

May 11-16 **International College of Surgeons.** Hofburg, Vienna. Sec.-Gen.: Horace E. Turner, M.D., 1516 Lake Shore Drive, Chicago 10.

May 18-20 **American College of Physicians (Far East Session).** U. S. Naval Hospital, Yokasuka, Japan. Info: Capt. G. M. Davis, MC, USN, Commanding Officer, U. S. Naval Hospital, Navy No. 3923, San Francisco.

May 28-31 **National Congress of Surgery.** Bucharest, Rumania. Sec.: E. Papakagi, Rumanian Society of Surgery, 8 rue Progresul, Bucharest.

June 14-19 **Inter-American Congress of Cardiology,** Montreal. Sec-Gen: O. Gialloreto, M.D., Institut de Cardiologie, 5414 boul Assomption, Montreal 36.

June 15-20 **World Medical Association,** Helsinki, Finland. Sec-Gen: H. S. Gear, M.D., 10 Columbus Circle, New York 19.

June 21-27 **International Academy of Pathology,** London. Sec-Gen: F. K. Mostofi, M.D., Armed Forces Institute of Pathology, Washington 25, D. C.

Workmen's Compensation Symposium And Banquet

SPONSORED BY WORKMEN'S COMPENSATION ADVISORY COMMITTEE

Thursday—May 14, 1964
Hotel Fort Des Moines

1:30 p.m. WELCOME—Governor Harold E. Hughes

WHAT'S NEW?

Recent workmen's compensation decisions, new forms, rules, and procedures, in Iowa and elsewhere.

Mr. Harry W. Dahl, Iowa industrial commissioner and other state and federal administrators.

PANEL DISCUSSION—"DISABILITY EVALUATION"

Moderator: D. Barry Moranville, deputy industrial commissioner

Panelists: Dr. John T. Bakody, Des Moines neurosurgeon
Mr. Herbert Bennett, Fort Dodge, president, Iowa Academy of Trial Lawyers
Mr. Fred D. Huebner, Des Moines lawyer
Dr. F. Miles Skultety, SUI neurosurgeon
Dr. F. Eberle Thornton, Des Moines orthopedic surgeon

QUESTION AND ANSWER PERIOD

5:30 p.m. Refreshments

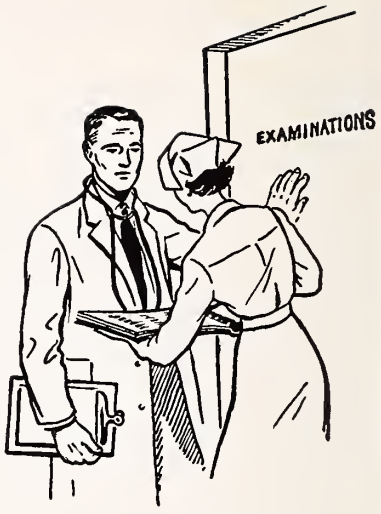
6:30 p.m. DINNER

Honored guests will include Mr. Daniel T. Doherty, chairman, Maryland Workmen's Compensation Commission and president of International Association of Industrial Accident Boards & Commissions; Iowa state and federal officials, and administrators from other states.

Registration fee of $8.00 per person includes refreshments and dinner.

Send reservations to: Workmen's Compensation Meeting, P.O. Box 712, Des Moines, Iowa.

THE DOCTOR'S BUSINESS



The Revenue Act of 1964

HOWARD D. BAKER
Waterloo

The Revenue Act of 1964, which President Johnson signed into law on February 26, is one of the most comprehensive pieces of tax legislation in 20 years. Although its basic premise was tax relief, it contains many loophole-closing provisions and a number of sections that prohibit previously allowable deductions.

Despite the "lip service" that has been given to the need for simplifying our entire federal tax system, the new law seems likely to complicate Form 1040 and its supporting schedules. Thus the gist of the following discussion must be: Don't do anything without first consulting your lawyer or tax advisor!

Major rate revisions, to take effect over a two-year period, will reduce individual income taxes an average of 16 per cent. Following are some other major provisions of the Revenue Act of 1964.

CORPORATE TAX RATES

The combined rate on taxable corporate incomes in excess of $25,000, which has been 52 per cent, has been lowered to 50 per cent for 1964 and to 48 per cent for 1965. However corporations with taxable incomes of $25,000 or less get a definite break, for the tax on the first $25,000 has been cut from 30 to 22 per cent.

In the past, we have said that individuals taxed at a rate less than 47 per cent would find no advantage, from a tax standpoint, in the incorporating of buildings, rental properties, etc. This guideline will now have to be reduced. On $1,000 of corporate income, an immediate $220 of tax liability will accrue. Upon liquidation of the corporation, the remaining $780 will be taxed as a capital gain, at a maximum of 25 per cent, or $195. Thus the total tax will be $415, or 41.5 per cent.

It appears obvious that our 47 per cent guideline will be reduced to 42 per cent. However with individual tax rates down, income previously taxed at 47 per cent will be taxed at 39 per cent for the years after 1964. It therefore seems that the *percentage level* of individual tax where incorporation is feasible has gone down, but that the *taxable income level* where incorporation is feasible has risen from $28,000 to $32,000. This matter will be given further study, but it will continue to be necessary for us to examine the individual facts in each instance where incorporation is under consideration.

PREMIUM-LOAN LIFE INSURANCE PLANS

Starting with 1964, on contracts purchased after August 6, 1963, the new law disallows deductions for interest on any indebtedness incurred or continued for the purpose of paying premiums on life insurance, endowments or annuity contracts under any plan for the systematic borrowing of amounts equal to part or all of the increase in cash values.

This disallowance will not apply if four of the first seven annual premiums are paid with other than borrowed funds, if the interest deduction is under $100, if the loan is negotiated because of unforeseeable business or financial factors, or if the debt is incurred in the course of the taxpayer's trade or business and is not made just in order to pay premiums.

For all practical purposes, this provision is a death sentence for the booming "minimum deposit" or "premium loan" type of insurance sales. Don't consider such a plan in the future, and if you have purchased one since August 6, 1963, or are considering such a purchase, seek competent counsel before making a final decision.

GAIN ON DEPRECIABLE REAL ESTATE

The new law requires ordinary-income treatment, in part at least, for a gain attributable to accelerated depreciation when one sells real estate that he has held for less than 10 years. The difference between straight-line and accelerated depreciation is the amount that is subject to this new provision. For real property held less than 20 months, all of this excess depreciation is taxable as ordinary income; thereafter, the amount reportable as ordinary income decreases by one per cent per month until, after 10 years, it can all be treated as capital gain.

INCOME AVERAGING

An extremely important new provision stipulates that nearly every kind of income other than capital gains, wagering income and income produced by donated or inherited property can be subjected to an averaging technic. Thus, if your income for the current year exceeds 133.3 per cent of your average income for the preceding four years by more than $3,000, you may apply the averaging formula.

The formula is far too complex to state here, but it does offer attractive tax savings for young doctors in the first couple of years of practice, when their incomes are increasing substantially. It also offers tax savings to other physicians who experience suddenly increased earnings. It will be necessary for such men to provide their advisors with their tax returns for all of the preceding four years, but the resultant savings will be appreciable.

DIVIDEND CREDIT AND DEDUCTIONS FROM TAXABLE INCOME

The new law reduces the 4 per cent dividend tax credit to 2 per cent for 1964, and abolishes it for 1965 and later years. However, it doubles the old dividend exclusion. The dividend exclusion is to be $100 for an individual and $200 for a husband and wife each of whom receives dividends totaling $100 or more. If the dividends your wife receives plus half of the dividends on stocks which you and she hold jointly amount to less than $100, you can save between $30 and $60 of taxes for 1964 by transferring ownership of some of your stocks to her.

Under the new tax law, sums paid for auto licenses, drivers' licenses, and cigarette and liquor taxes are no longer deductible. The only state taxes remaining deductible on your federal return are property, income, sales and gasoline taxes.

The law now permits the taxpayer to deduct only the amount by which his casualty losses exceed $100.

In addition to these major changes, there are many others with less effect. These involve moving expenses incurred by employers on behalf of employees, sick-pay exclusions, stock options, child-care expense, optional standard deductions, premiums on group term life insurance policies in excess of $50,000, etc.

Obviously, the Revenue Act of 1964 is a great deal more than a simple rate revision, and the changes it brings will affect every taxpayer in one way or another.

Attend the AMA Annual Meeting
in San Francisco
June 21-25, 1964

Young Smokers Are Rebels Against Authority

High school students who smoke are less well adjusted to adult authority than are non-smoking students, a recent study has shown. A total of 304 seniors, aged 16 and 17, attending the Newton, Massachusetts, Public High School were given a group psychological test in an attempt to measure personality differences between those who smoked and those who had stopped smoking or had never smoked. The results were reported by Eva J. Salber, M.D., and Joan E. Rochman, Ed.M., of Boston, in the March, 1964, ARCHIVES OF ENVIRONMENTAL MEDICINE.

Among boys, the smokers, and particularly the heavy smokers, were found to have less satisfactory relationships with authority in general, and with parents in particular, than did non-smokers. Girls who smoked heavily gave a picture similar to that of all boys who smoked. However, the girls who smoked were apparently more cheerful and self-confident than were those who did not smoke.

"A very important social drive in this age group is the need for status or prestige," the investigators said. "Children who are less well adjusted in the field of family relations and adult authority are more likely to seek security in the company of their peers and to use a cigarette, which at one and the same time symbolizes adulthood, superiority and defiance."

Previous studies showed that smokers achieve less satisfactorily in school than do non-smokers, they continued, but it seems reasonable to believe that smoking is the result of the low achievement, rather than the reverse.

"As indicated by a study of recreational patterns, it would also appear that smokers do not have the inner resources of the non-smokers," the researchers added. "For example, smokers watch television more, go to movies more often, and read fewer books than do non-smokers. They also are more frequently car owners, and go to more dances than do non-smokers, but they play sports less and belong to fewer clubs than do non-smokers."

The psychological testing revealed that among boys, non-smokers appear to be a confident group, but that discontinued smokers apparently are both less self-confident and more difficult to get along with. Girl non-smokers, however, are apparently "shy people with little self-confidence," according to the report. Discontinued smokers appear self-assured. The girls who smoke seem to be the most rebellious, and while enjoying social contacts express impulses which may be socially unacceptable.

At this age level, it is likely that patterns of behavior will still be fluid, the authors pointed out, and only cautious generalizations should be made on the basis of a single test at one point in time.

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

The Public Health Problem of Iowa X-Ray Machines

Ionizing radiation exposes more people today than at any other time in our history, and it is postulated that over 50 per cent of this exposure comes from everyday medical and dental radiation sources used in therapy and diagnosis. Obviously significant benefits derived from the use of x-ray far outweigh the hazards, but the possibility of some somatic or genetic damage does exist. All of us who are interested in public health desire to minimize the doses delivered to people, in so far as is consistent with the diagnostic or therapeutic needs of the patient, so that a low probability exists for such biological damage. A significant service to the medical and dental users of x-radiation can be achieved through a physical evaluation of their existing x-ray equipment.

As yet, Iowa has no specific radiation law, but at the request of the Iowa State Department of Health, the State Hygienic Laboratory has assumed responsibility for making such studies. For many years, the Laboratory has provided the state with data on nuclear fall-out, radioisotope concentrations in ground and surface water supplies and, more recently, with information on industrial, medical and dental x-ray installations.

A pilot field survey was conducted by a health physicist of the State Hygienic Laboratory in 1960 to determine whether randomly-selected x-ray machines used by physicians, dentists, chiropractors, osteopaths and veterinarians were producing unnecessary x-ray exposure to the patient and the operator. It was found that more than 80 per cent of the inspected x-ray machines were emitting a beam larger than needed, and that the beam quality in these cases tended to be poor. Several of the medical units were emitting a chest x-ray beam considerably larger than the required 14 in. x 17 in. film, with the result that virtually the whole body of the patient was being irradiated. Eighty per cent of the dental units reviewed failed to conform with the 2.75-inch beam-diameter recommended by the U. S. Public Health Service. The physical conditions of these x-ray units were reported to the Governor's Advisory Committee on Ionizing Radiation, and the Committee moved that the State Hygienic Laboratory conduct an expanded survey, with the aid of the Iowa State Department of Health and the U. S. Public Health Service.

Because of the simplicity of a dental x-ray machine survey and the availability of a mailable survey packet (Sur-Pac) furnished gratis by the U.S.P.H.S., the decision was made to concentrate efforts on dental x-ray units. The Sur-Pac made it possible to review a large number of dental units with minimum personnel and cost. The Sur-Pac consists of an x-ray film, with attached aluminum step-wedge, which can be exposed by the dentist and returned to the laboratory for development and analysis. The Sur-Pac permits determination of beam shape and size, total filtration, head leakage and dose rate.

The Dental Hygiene Division of the State Department of Health mailed 1,539 questionnaires to registered dentists in an attempt to locate all dental x-ray machines in Iowa. Of those, 941 were returned, and 876 dentists indicated they had x-ray units and wished to participate in the survey.

The State Hygienic Laboratory then mailed 876 Sur-Pacs to the interested dentists, and 775 were returned to the Laboratory. Analysis of the data showed that 52 per cent of the machines produced oversize beams; 71 per cent emitted poor-quality or inadequately filtered beams; and about 2 per cent had detectable head leakage. A full report of the results has gone to each dentist, with the necessary lead washers or aluminum filters, if their machines required modification. The lead washer, when inserted in the dental x-ray unit, collimates the beam to the recommended 2.75-inch diameter, and the aluminum discs absorb that part of the x-ray spectrum which is undesirable and unusable. In both instances, unnecessary x-radiation is reduced.

The health physicist from the State Hygienic Laboratory performs field surveys on individual dental installations when requested by a dentist, through the State Department of Health. Field inspections are also carried out when the limited Sur-Pac data indicate the necessity of an "on the spot" review. In these field surveys, the additional areas closely scrutinized are barrier protection, length of remote-control cord, timer accuracy, type of film, developing procedures, film storage and operator's technic. Ideally, an inspection by a radiologic-health physicist should be made to evaluate dental x-ray procedures and equipment, but shortages of personnel and of funds presently pro-

hibit a personal review of all dental offices, and have restricted the amount of work that can be done in the area of medical x-ray.

Surveys in Iowa indicate the advisability of further evaluations of the physical characteristics of x-ray machines, in order to minimize unnecessary and unusable x-radiation to the patient and the operator. The understanding and support of the medical and dental professions are earnestly solicited, so that this radiologic-health service can continue and expand.

This summary report was prepared by R. L. Morris, Ph.D., assistant director and principal chemist, and Mr. James Oppold, health physicist, State Hygenic Laboratories, Iowa City.

Botulinus Antitoxin

The following information, received March 9 from the USPHS, should be of interest to all Iowa physicians:

"The need in the United States for an immediately available stock of Type E botulinus antitoxin has been emphasized by the occurrence during the past year of three outbreaks of Type E botulism, involving 22 cases. This has been an extraordinary occurrence, and contrasts sharply with the experience of the past 30 years, during which less than 40 cases in all have been recorded. We have no cause to believe that the experience of 1963 will be repeated in the future. However, since Type E antitoxin is not produced in the United States, and thus is not readily available, the CDC has procured a limited supply of Danish polyvalent botulinus antitoxin which includes Type E. This has been titered and tested, and will be made available on an emergency basis, should the need arise.

"Around-the-clock telephone coverage has been established at CDC. The telephone number is: Area Code 404—634-2561.

"For Types A and B antitoxin, contact should be made, as in the past, with Lederle Laboratory representatives. They have supplied us the following list of numbers which, similarly, are covered on a 24-hour per day basis:

(List abbreviated to include only those adjacent to Iowa.)

City	*Name*	*Telephone*
Chicago, Ill.	J. W. Simons	CO7-6400
Kansas City, Kan.	W. J. Hammond	EM3-3305
Minneapolis, Minn.	P. J. Will	WE5-1721

"Although time does not permit laboratory studies prior to treatment to determine the botulism type involved, it should be noted the Type E botulism has been associated with fish or fish products such as smoked fish, canned tuna, salmon eggs, etc. Types A and B botulism may be transmitted through a broad spectrum of improperly processed foods, including fish and fish products. Thus, unless some form of fish is suspect as the vehicle, treatment with bivalent A and B antitoxin should provide optimum specific therapy."

This information has been sent to the chief pharmacists of all Iowa hospitals.

Morbidity Report for Month of March, 1964

Diseases	1964 Mar.	1964 Feb.	1963 Mar.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	496	600	522	Dubuque, Hancock, Johnson, Kossuth, Polk
Typhoid fever	3	2	0	Scott
Smallpox	0	0	0	
Measles	418	198	1231	Buena Vista, Polk, Scott, Union
Whooping cough	0	11	6	
Brucellosis	6	12	18	Scott
Chickenpox	390	631	938	Clay, Des Moines, Dubuque, Polk, Scott
Meningococcic meningitis	1	1	1	Woodbury
Mumps	1371	1802	434	Entire state
Poliomyelitis	0	0	0	
Infectious hepatitis	24	55	29	Dallas, Linn, Plymouth, Polk, Woodbury
Rabies in animals	46	38	29	Chickasaw, Emmet, Johnson, Keokuk, Kossuth, Linn, Muscatine, Sioux, Washington, Webster, Winneshiek
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	15	33	43	For the state
Syphilis	67	105	86	For the state
Gonorrhea	82	195	101	For the state
Histoplasmosis	1	6	1	Cerro Gordo
Food intoxication	0	0	3	
Meningitis (type unspecified)	3	7	3	Cass, Cherokee, Van Buren
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	0	
Salmonellosis	3	9	3	Iowa, Webster, Woodbury
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	1	1	Buchanan
H. influenzal meningitis	0	1	1	
Amebiasis	0	2	4	
Shigellosis	4	3	0	Black Hawk, Johnson, Muscatine
Influenza	392	306	843	Polk

Alcoholism

The Commission on Alcoholism is encouraged by the requests that are coming to it from general practitioners for copies of the Chart of Alcohol Addiction and Recovery which was printed, in reduced size, on page 161 of the March, 1964, issue of the JOURNAL.

This chart appears to provide a useful aid to therapy. Studying it in consultation with a physician seems to help the compulsive drinker to realize that his problem is not unique, that he is following a well-established pattern, that his disease is no longer a medical enigma, and that he now has medical assistance, in the person of his doctor, that he cannot reasonably refuse. In the Commission's view, this is the kind of supportive therapy that is well within the province of the general practitioner.

Supporting this view, R. A. Moore, of the University of Michigan Medical School, reports recent statistical studies showing that the majority of alcoholics—80 to 85 per cent of them—are poor candidates for the deep uncovering technics of psychotherapy, but rather that they respond to prescribed regimens which include pharmacologic agents. The Commission on Alcoholism concurs, provided the prescription is rigidly supervised to preclude the possibility of sedative addiction.

Mr. Charles Churan, secretary of the Commission, declares, "We don't need to make a Hollywood psycho-production out of alcoholism. Alcoholism is a *symptom*. Where a neurosis is involved, *both* are treatable. The family doctor is in the best position to make the initial diagnosis."

Antibody Protection Against Rubella Virus

Research under way to perfect a vaccine against rubella (German measles) has yielded clues as to susceptibility to the disease. In a study of 600 expectant mothers (50 from each of 12 hospitals), investigators found 17.5 per cent of the women to be without demonstrable antibody protection against the rubella virus.* The figure was 18 per cent for Indian and Eskimo women in Alaska; and 44 per cent for Hawaiian pregnant women. Earlier tests with other subjects had shown that individuals without neutralizing antibody contracted the disease, whereas those whose blood tests revealed antibodies were resistant to it.

A hope for the future is in the rubella vaccines now under development. Since the proportion of individuals without antibody decreases with age, young girls and women appear to be the preferred candidates for vaccination when safe and effective vaccines are found.

* Sever, J. L.: Frequency of rubella antibody among pregnant women and other human and animal populations. OBST. & GYNEC., February, 1964.

Vital Capacity Sometimes High in Emphysema

Tests of vital capacity—the number of cubic inches of air the patient can expire after an inspiration—are made in checking persons with emphysema. Although most investigators agree that vital capacity decreases as the degree of emphysema increases, findings of high vital capacity in advanced cases of the disease currently are being reported.* This indicates that vital capacity is only one of several pulmonary-function studies needed in detecting emphysema.

* ANN. INTERN. MED., January, 1964.

Cardiovascular Death Rate for Men Drops

A downward turn in the death rate from cardiovascular disease among men in the age range from 45 to 64 years became evident for the first time in 1963. The American Heart Association's annual report revealed the drop to be six per cent.

Although heart and blood-vessel diseases still account for more than half of all deaths each year in the United States, the gains noted in 1963 suggested that the goal of materially reducing premature death and disability from cardiovascular disease is attainable.

Absenteeism

Among unmarried employees, men stay home from work because of sickness more days than women . . . at the rate of 4.3 days per man per year, as compared with 3.9 days per year per woman. Among married persons, however, women have a higher rate than men . . . 6.1 days per year per woman, as compared with 4.7 days per year per man.* The responsibility for the care of children constitutes a reasonable explanation for the higher absence rate among married women.

* Enterline, P. E.: Sick absence for men and women by marital status. ARCH. ENVIRONMENTAL HEALTH, March, 1964.

Woman's Auxiliary News

Health Careers Clubs' Career Day

Three years ago, when the state was divided into three areas—East, Central and West—to make administration of the Medical Auxiliary more equitable and to enable every county Auxiliary to take part, it was also decided to try the same division in setting up the Career Clubs' convention or Career Day. It was hoped that by that means we might get a larger overall attendance.

In accordance with this plan, three Career Day meetings were held on October 18, 1963. The East Area Health Careers Day was held at Iowa City, under the co-chairmanship of Mrs. Wayne Tegler and Mrs. J. L. Ehrenhaft. Ninety-one were registered. The emphasis was placed on recruitment to health careers. Talks on social service, psychology, physical, occupational and recreational therapy, and medical technology were given. Lunch was served at the Quadrangle. In the afternoon, talks on medicine, nursing, dentistry, pharmacy and roentgenologic technics were given. Fact sheets on the various fields were distributed. It was a most successful day. Club members were registered from Chariton, Waterloo, Clinton, Ottumwa, Oskaloosa, Lone Tree, Muscatine, Marion, Urbandale, Iowa City, Hills, Cedar Rapids, LaPorte City, Olin, Oxford Junction, Bennett, Mid-Prairie, Millersburg, Washington, Tipton, New Liberty, Wellman and North English. The project was given fine newspaper publicity. The Woman's Auxiliary to the Johnson County Medical Society and the State University of Iowa are planning to hold a Health Careers Club Career Day again next year.

The Central Area Health Career Clubs' Career Day was held in Webster City, at the Hamilton County Hospital. Mrs. J. L. Ptacek and Mrs. G. A. Paschal, co-chairmen of the County Health Career Clubs, were in charge, assisted by the Hamilton County Medical Auxiliary, the Future Nurses Club of Webster City, the Webster City Community Schools, and the staff of the Hamilton County Hospital. Eighty-one were registered, representing Britt, West Des Moines, Ankeny, Fort Dodge, Mason City, Webster City, South Hamilton, Northeast Hamilton, Badger and Boone. The program included a welcome by the school nurse; a panel discussion on health careers, led by Dr. Faye Lewis; group singing; a roll call of schools, with a few words from a representative of each of them; a skit on Future Nurses; and a tour of Hamilton County Hospital. Lunch was served at the Pleasant View School, and at the end of the day a coke party was given by the hospital. Mrs. Ptacek suggested in her report, "The young folks could make an exchange of ideas a very interesting part of the morning program. Panels composed of representatives from the different schools could get the discussion started, and afterwards the discussion could be opened up to the group." She also suggested that each club should be invited to send five delegates and a sponsor, for a car has to make the trip, and it might as well be full. The Central Area seems to have had a most successful and rewarding day.

The Western Area Health Careers Clubs' Career Day was held in Sioux City, under the direction of Mrs. Henry Boe and Mrs. John Tiedeman, and with fine cooperation from the four Sioux City hospitals and the Sioux City Medical Auxiliary. The response was not all what had been hoped for. The schools in that area were not closed for the state teachers' convention in Des Moines, as they were in the East and Central Areas; the countryside was blanketed in fog, making driving very hazardous; and in the Western Area there are fewer organized Health Careers Clubs than there in the other parts of the state. Spencer, Harlan, LeMars, Cherokee and Sioux City have the only Health Careers Clubs in the area. At the Careers Day, there were delegates only from Harlan and Sioux City. An excellent effort was made, however, and we are grateful to those who participated.

It has been planned and approved by the president and the Board to go on with these area meetings. They were better attended this year, and were more representative of the whole state. Mrs. Ehrenhaft, in her excellent report, wrote, "This was our first conference, and though we made some mistakes, we learned a great deal." I can see no mistakes that they made; it was a splendid day and a fine program.

I present this report as state chairman of Health Career Clubs.

—Paulyne B. Dawson
Webster County
Fort Dodge

Three Suggestions

Let's remember that we can educate ourselves through the various channels of our Auxiliary—safety, civil defense, etc. The recent earthquake in Alaska should alert us to the importance of being prepared for emergencies. The more recent tornado devastation at Yorktown, Iowa, has brought the possibility of disaster even closer to us. Countless pieces of literature on plans for emergencies can be had for the asking. Each one is worth a period of study. One place where the Auxiliary shines is in keeping up to date with new developments.

In legislative matters, there are constant changes of which Auxiliary members must keep aware. Right now is the time to let your Congressman and your Senators know that King-Anderson type legislation is neither wanted nor needed. Write letters to them, and enlist your friends to help.

The state deadline for contributions to AMA-ERF is April 20, and the national deadline is May 31, 1964. Certificates will be given to the counties with largest contributions, with the greatest per capita contributions, and with the greatest increase in donations over the previous year. Let's concentrate on selling note paper, sympathy and appreciation cards.

—MARY MCMILLAN

COUNTY AUXILIARIES

Black Hawk

The proceeds from the Black Hawk Medical Auxiliary's Medicine Ball were divided among the four local hospitals, Sartori Memorial, Schoitz Memorial, St. Francis, and Allen Memorial. Each received $300.

The Cedar Falls Medical Auxiliary met on April 14 at the home of Mrs. John T. McCoy.

Boone

Because of the interest and generosity of the Boone County Bar Association, the Boone State Bank and Trust Company, the Citizens National Bank, and the Iowa Electric Light and Power Company, which joined the Boone County Medical Society this year as sponsors for the AAPS Essay Contest, it was possible to offer prizes totaling $150 at the county level. Prizes of $50, $30 and $20 were given, respectively, to the top three essayists, and each of four additional contestants received a $10 award. Mrs. A. W. Puntenney served as chairman of the project for the Auxiliary.

Buchanan

The Woman's Auxiliary to the Buchanan County Medical Society entertained the doctors of the county at a luncheon on March 30, in observance of Annual Doctors' Day, at Hotel Pinicon, in Independence. Each doctor was given a red carnation to wear during the remainder of the day, and Mrs. Frank Brimmer presented a musical program.

Since 1935, March 30 has been set aside nationally to honor the medical profession. It is the anniversary of the first use of ether as an anesthetic, by Dr. Crawford Long, a rural practitioner in Georgia, in 1842. Prior to that time, only opium, alcohol and prayer were available for the control of pain.

The committee members in charge of the luncheon were Mrs. Bruce Ambler, Mrs. Harry Oestreicher and Mrs. F. A. Kordecki.

Mahaska

Mrs. D. A. Mater, of Knoxville, counselor for the Ninth District of the State Auxiliary, appeared at a meeting of the Mahaska County Auxiliary on March 17, to discuss AMA-ERF and the part of the doctor's wife in civil defense. Mrs. Lawrence Grahek presided at the business session.

Polk

In observance of Doctors' Day, March 30, five members of the Polk County Medical Auxiliary—Mrs. J. H. McNamee, Mrs. W. B. Chase, Jr., Mrs. F. M. Burgeson, Mrs. B. F. Kilgore and Mrs. D. C. Wirtz—made visits to 18 retired or shut-in physicians, and presented each of them with a red carnation.

The Polk County Auxiliary held a regular meeting at noon, on April 10, at Noah's Ark Restaurant, in Des Moines. The guest speaker, Dr. F. C. Coleman, spoke on medical legislation.

Wright

On March 30, in observance of Doctors' Day, the doctors of Wright County wore red carnations that had been presented to them by members of the Wright County Medical Auxiliary.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. G. J. McMillan, 436 C Avenue, Fort Madison
President-Elect—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 12
Recording Secretary—Mrs. N. A. Schacht, 1025 North 23rd Street, Fort Dodge
Corresponding Secretary—Mrs. F. L. Poepsel, Box 176, West Point
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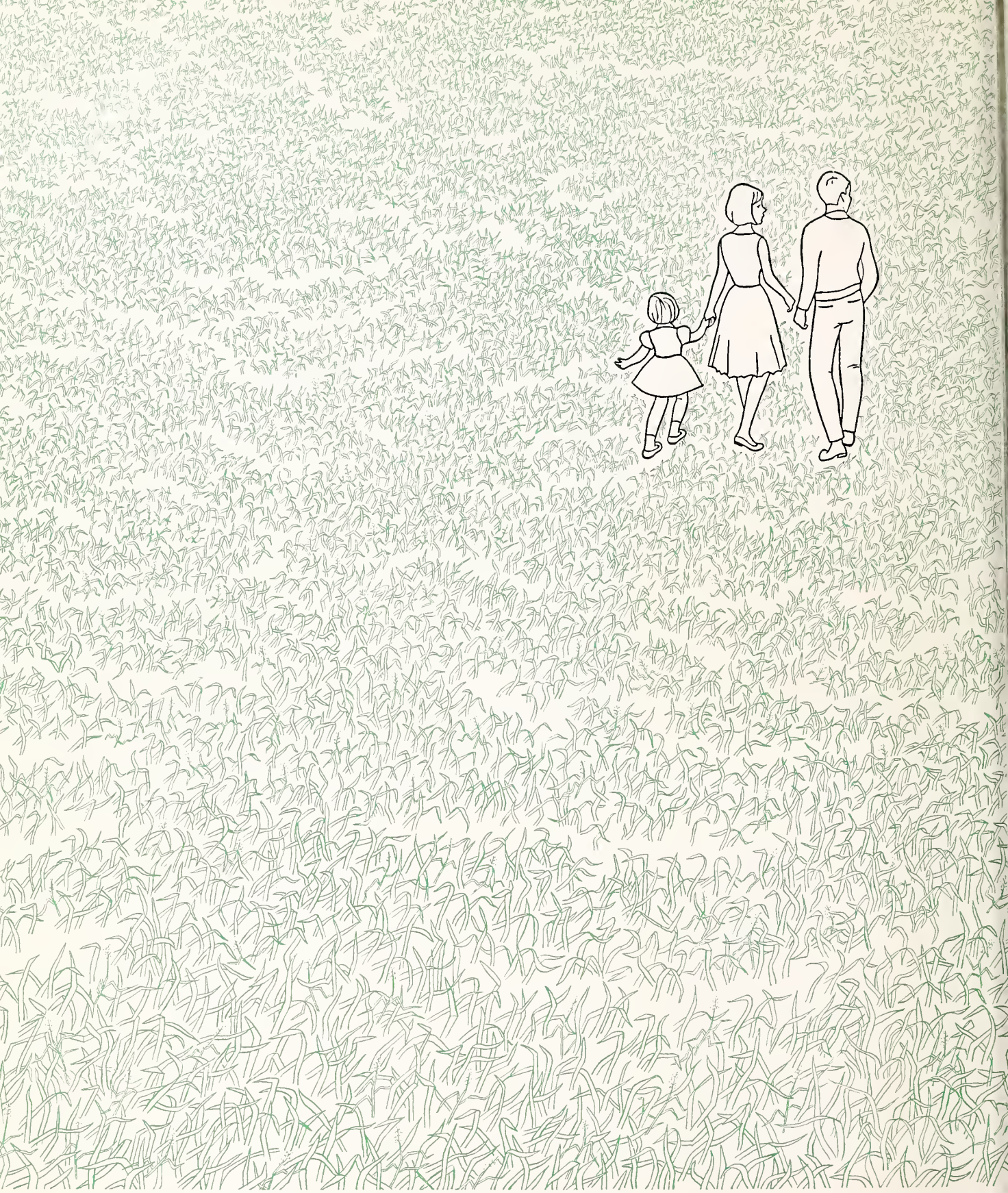
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The Physician's Role in the Social Security Disability Program

SIDNEY L. SANDS, M.D.
Des Moines

MANY PHYSICIANS IN IOWA and throughout the country are called upon to examine patients who are applying for disability benefits in the Social Security Program. Despite the fact that under this program the patient freely chooses his own physician, who in turn is compensated for his services, physicians are often unsympathetic both with the applicant and with the program. In a larger sense, we are often overtly or covertly hostile to patients who come to us, not for treatment, but for diagnostic evaluation to be used in determining compensation for injury, illness and disability. Political, social and medical philosophies come into conflict, and too often the issues becomes lost in the heat of controversy. It is therefore fitting that we reexamine the role we play as physicians in these programs that are inevitable in a large, complex and changing society.

From time immemorial, man's hostile-aggressive behavioral patterns have been counterbalanced by patterns of humane acts which have indicated his capacity for concern about his fellow man. In the beginning, such acts must have been performed primarily in relation to members of the individual's family or tribe. Only later did his compassion extend to the stranger at the gate and to collectivities of strangers beyond the boundaries of his own domain. In more modern times, the American culture has been characterized by its generous concern for its own citizens and for those of other lands. Our private and public charities, our religious and service organizations, our local and national governmental agencies have long been engaged in programs of assistance to the needy, here and abroad.

Physicians, as individuals, have traditionally been among those most responsive to human suffering, and they have given generously of their skills and time, when and wherever needed. As the population has expanded rapidly, the pattern of servicing human needs has necessarily grown more complex, and has required increasingly more complicated machinery to provide and administer the programs by means of which those needs may best be served. The sheer quantity of people to be served has tended to alter the means for accomplishing that service.

Physicians, by virtue of their special training and professional work, are much more comfortable in the intimate person-to-person relationships which are the heart of medical practice, and are less than happy in the more impersonal aspects of medicine which involve groups and programs. As a result, there is resistance to and irritation with the growing volume of paper work necessary to the handling of various services to patients. The physician comes to feel less and less free to make decisions and choices as to whom he will treat and how he will manage individual cases. He often develops the feeling that he is no longer a voluntary participant, but that he is caught in what he regards as a conspiracy between a hostile government and an unfriendly, unappreciative public. The programs of public assistance are viewed as sinister devices designed to control the public *and* the doctors. The people served by these programs come to be regarded less as "needy" individuals than as greedy irresponsibles who want something for nothing.

It must be acknowledged that there are imperfections in programming and administration, and that in any society there inevitably are a number of people who do act out of greed, weakness and self-interest. However, we should be guilty of hypocrisy and very bad logic if we judged the overall situation by the undesirable elements which have become the basis of our complaints. The programs exist only because there is need for a means of helping large numbers of people in a complex society—the people who are sick or injured, and who need our help. Just as physicians may debate the diagnosis of a given case and argue the merits of one treatment over another, so too is there debate about the kinds of needs and the kinds of programs. And just as doctors are unequally skilled, so it is with administrators. It is unfortunate that, individually and collectively, we physicians have tended to overlook this fact, and have perhaps fought the right battles for the wrong reasons. It would be naive to insist that all programs are "medically" sound, but it would be, and indeed is, utter foolishness to regard them as all "politically" evil.

Dr. Sands is psychiatric consultant to the Disability Determination Section, Old Age and Survivors Insurance, 615 Bankers Trust Building, Des Moines 50309.

EVALUATING DISABILITY SHOULD BE A TEAM TASK

Some programs are designed to provide care for illness and injuries. Physicians are responsive to the presence of pain and suffering, and give of their skills in the treatment thereof. Other programs deal also with the *effects* of illness or injury. Thus, we are also concerned with the long-range consequences of pathology. Can the individual engage in gainful employment? What manner of work can he do, and what re-training or rehabilitation will he require? These questions are of more than medical and academic interest. The non-productive citizen is a social liability. If he cannot work, as a result of a physical or mental disability, he needs not only medical care, but also such support as will enable him to participate with some measure of dignity in the society in which he lives. If his condition does not warrant such support, this must also be determined. If, beyond this, his disability prevents him from resuming the type of work in which he was previously engaged, it is important to evaluate his present capabilities for employment and the potential for work that a rehabilitation and training program might give him.

These evaluations are not exclusively medical in nature, but they do require skilled medical judgments as part of the evaluative process. Physicians, together with others trained in vocational rehabilitation investigation, form a team which can best do the job. Private physicians form an important element in this team and can participate without deviating in any significant manner or degree from their customary practice of medicine. One program which embraces this team approach is the Social Security Disability Insurance Program. Many physicians have little awareness of this program, and many have unfortunately, automatically become prejudiced against it, without understanding its structure and function and their own stake therein.

Since the certification of disability is so intimately related to important facets of medical practice, the development of effective and mutually satisfactory working relationships with individual physicians and with organized medical groups has been of major importance in the program's successful administration. Equitable disability decisions depend in large part on the completeness of medical evidence which physicians submit in support of their patient's claim for disability benefits. Policies and procedures for procuring such evidence have been developed within the framework of prevailing patterns of medical practice and in a manner intended to avoid hampering the doctor-patient relationship.

All applicants for disability benefits are referred to the Iowa Vocational Rehabilitation Agency for possible vocational rehabilitation services.

The above information is offered in order that we in Iowa may continue, without violations of our personal standards or private philosophies, to respond wholeheartedly to human needs.

The Doctor's Role in Disability Evaluation

F. MILES SKULTETY, M.D.
Iowa City

DISABILITY IS PRIMARILY a legal rather than medical problem. Unfortunately, however, this fact is not widely recognized by our courts, legislative bodies, compensation boards and insurance carriers, or by a large segment of the physician population of this country. Despite the manner in which disability may be defined by the courts or compensation boards, the actual determination of the per cent of disability in a given individual is influenced by a host of factors that are medically irrelevant. The pre-injury occupation and income of the disabled individual, his social prominence in the community, the financial status of the defendant, and a number of similar factors definitely influence the size of the award made by the court.

To a degree, it is true, these factors fail to affect the awards made by compensation boards, since the amount to be paid in such cases is usually fixed by law. Mr. Harry W. Dahl, the Iowa Industrial Commissioner, was kind enough to supply me with information pertaining to the state of affairs in this state. The Iowa Workman's Compensation Service has no table determining the permanent impairment presumed to result from the loss of given parts of the body. The tables published by the American Medical Association are frequently employed. Under the section of the Iowa Workman's Compensation Act relating to permanent partial disability, certain scheduled injuries are set out. However, where the injury is outside of the schedule, disability must be determined as a percentage of permanent total disability. Here, the test employed is the loss of earning capacity, and the Iowa Supreme Court has said that the Compensa-

This article is based on a paper that Dr. Skultety presented at the fall meeting of the Iowa-Midwest Neurosurgical Society, October 5, 1963, at Sioux City, Iowa. He is a professor of neurosurgery at the S.U.I. College of Medicine.

tion Service must consider not only the extent of the functional impairment but also the age, training, experience, and intelligence of the injured employee.

Throughout the country in general, the amount of the award made by a court or by a compensation board will depend, to a considerable degree, on a physician's estimate of the per cent of disability. This forces the doctor to assume a role which is unfair to him as well as to the injured individual. One of the major reasons for this state of affairs arises from the assumption that since the doctor deals with disabled people throughout much of his professional career, he is in a position to estimate their degrees of disability.

THE DEGREE OF IMPAIRMENT ISN'T A MEDICAL QUESTION

This assumption fails to recognize the fact that disability *per se* is the *result* of being injured, and is not the injury itself. In fact, the relationship between disability and the injury which is presumed to have been its source is quite variable in different individuals and in different situations. I hope to point out in this paper that whereas the physician may be considered an expert regarding the physiologic and anatomic deficits resulting from an injury, he is no position to determine the per cent of disability arising from an injury.

Two recent reports in the literature[3, 4] attest to the fact that the opinion of an individual physician regarding the per cent of disability in a given instance is quite arbitrary and has no significant correlation with the opinion of another physician. The figures presented in these reports were based on a survey of a large number of neurosurgeons. These indicated that with respect to specific neurologic residuals, the opinions of the respondents as to the per cent of disability frequently ranged from zero to 100 per cent. Although in some instances there was a tendency for the opinions to be grouped at one end of the range, in general they fitted fairly typical Gaussian distribution curves. Such reports make it obvious that no reliance can be placed upon the opinion of an individual physician, and it therefore follows that such as opinion should not be used to determine the amount of an award made to a claimant for an injury.

Although I do not wish to argue the merits of our cultural philosophy which approves the practice of granting monetary recompense to an injured individual, I should like to point out that this philosophy gives rise to one of our greatest legal paradoxes. If one person murders another, he may be jailed and/or executed, but he is never forced to make financial restitution to the family of the murdered individual. However, if one person kills another accidentally and is adjudged negligent, he must make financial restitution even if, in so doing, he jeopardizes his own security and that of his family.

DEGREE OF IMPAIRMENT CAN'T BE ACCURATELY DETERMINED

Having established the premise that disability is the *result* of being injured, I ask you to consider the various factors that are operative in post-traumatic disability. Broadly, these may be divided into two groups: the intrinsic medical factors and the extrinsic socio-economic factors. We shall consider the intrinsic medical factors first, since they fall more properly within the realm of the physician. Manning *et al.*[4] indicate that this will involve a consideration of, ". . . those alterations from the 'normal' physiological performance potential of organs or tissues which result directly from bodily injury or from the complications thereof." For the sake of discussion, we shall accept the premise that a physician can be considered an expert in these matters. However, a fallacious interpretation of this premise on the part of jurors, members of compensation boards, and insurance adjustors has given rise to much of the difficulty involved in the problem under discussion. Many of these individuals assume that since a physician is expert in determining alterations from the normal physiologic performance potential, he should be able to give an accurate figure for the per cent of total body function represented by the loss or impairment of function that has befallen a specific portion of the body. To many, this figure is directly equatable with a per cent of disability, and even those who do not directly equate the two are inclined to place undue emphasis on the percentage loss of bodily function in determining the per cent of disability. I maintain that no reasonable or accurate percentage figure for loss of bodily function can be determined.

What kind of logical value system can be set up to determine accurately the per cent of total body function represented by the index finger, by the upper lobe of the right lung, by twelve inches of terminal ileum, or by the right frontal lobe of the brain? Any figure used must obviously be quite arbitrary. Many compensation boards and some insurance carriers, indeed, have assigned definite percentages to various portions of the body, but the problem becomes more difficult if one attempts to determine the per cent of alteration from normal physiologic performance in an individual who has generalized convulsive seizures at approximately monthly intervals following a head injury. Furthermore, does the same per cent of loss of bodily function apply to the individual who has lost the right upper extremity via a traumatic amputation at the shoulder, and to the one who has lost the use of the same extremity because of a complete paralysis secondary to a severe injury of the brachial plexus? When one considers the various possibilities, it becomes obvious that no single, simple table of values can cover all possible situations.

Under such circumstances, the interested authority, whether it be a compensation board, in-

surance carrier or court, turns to the individual physician for his opinion regarding the per cent of loss of bodily function. If this is a valid method of determining such figures, then we should expect that there will be a reasonable agreement among physicians; however, most experienced lawyers and members of compensation boards will readily attest to the fact that such is not the case.

PARTIAL DISABILITY IS HARDEST TO EVALUATE

Another attempt to avoid the difficulty inherent in asking the physician for an estimate of "the per cent of disability" involves requesting an estimate of "the per cent of impairment" resulting from an injury. Since it is essentially impossible either to determine all of the functions of a part of the body or to decide what constitutes maximum function, it is impossible to determine the amount of impairment of a particular function, short of total loss. Also the fact that the functions of all parts of the body are interrelated makes it impossible to determine the relative importance of a particular part to the individual as a whole. Therefore, it follows that any percentage figure given to indicate the degree of impairment of an individual as the result of the impairment of a particular part is invalid, even in those cases where the part is totally impaired.

Before leaving the matter of the intrinsic medical factors in disability, I should like to call the reader's attention to one more matter. This concerns the so-called "psychogenic overlay" in a patient's complaints regarding the results of an injury. How can any physician, even a board-certified psychiatrist, *accurately* assess the role played by this feature in a patient's disability? In this regard, the reader is referred to a report by Gotten[1] in which it was shown that 95 per cent of people with whiplash injuries became asymptomatic following settlement of their litigations.

SOCIO-ECONOMIC FACTORS ARE ALWAYS INVOLVED

Turning now to a consideration of the extrinsic socio-economic factors in disability, it should be obvious to all that the physician is no more expert in this realm than is the average layman. Although the physician is not *usually* asked to render an opinion on these matters, he is influenced by them when rendering an opinion regarding the per cent of disability based, supposedly, on purely medical factors. The physician's knowledge of the patient's occupation or social standing, as well as his own personal biases regarding both the defendant and the plaintiff, will definitely modify his opinion.

Let us first consider the economic factors in disability. If a farmer loses the index finger of his left hand, it can be assumed that his impairment will not seriously hinder him from earning his living running a farm. However, if a concert pianist suffers a similar loss, his career on the concert stage is finished, and he is likely to incur considerable economic hardship. Certainly it will require that he earn his living in a different manner. Economically, one of these men is much more seriously disabled than the other, yet medically their injuries are exactly the same.

Concerning the social factors of disability, consider the individual who develops post-traumatic epilepsy after a head injury. He may curtail much of his former social activity because of the embarrassment caused when his seizures occur in public, or his friends may shun him and exclude him from their gatherings because of their personal prejudice against "people who have fits." Consider the changes brought about in the relationship between a husband and wife following traumatic paraplegia in the man, with its resultant loss of sexual function. These matters are of extreme importance to the injured individual and are, in fact, disabling. However, there is nothing in a doctor's education or background which makes him any more qualified than a non-medical person to judge the degree to which such matters influence the individual's disability.

As a final argument to support the premise that a physician is no more competent to judge disability than is a non-medical person, I should like to cite the report of Kessler and Manning.[2] A series of patients with the residuals of various illnesses were presented to a mixed audience of physicians and lawyers. A ballot was called for, and each person in the audience was asked to indicate his estimate of the patient's disability. When the results of these opinions were tallied, it was found that there was no unanimity of opinion within either group. Furthermore, although there was a difference of opinion between the doctors and the lawyers regarding certain of the cases, the percentage estimates of disability of the two groups almost exactly paralleled one another except for the shift of a few percentage points.

JURIES MIGHT AS WELL BE LEFT TO ANSWER THIS QUESTION

If it is not the doctor's responsibility to estimate the per cent of disability, then upon whose shoulders does this responsibility fall? I maintain that this is the responsibility of our legislative bodies and our courts, since they have taken it upon themselves to decree that an individual shall receive a monetary award because he has become disabled as the result of an injury. At first glance it might seem that they have accepted this responsibility and are carrying it out effectively, since they do determine the amount of the monetary award. However, if the amount of this award is based upon the percentage of disability suffered by the individual, then, to a greater or lesser degree, the *ultimate responsibility* is shifted to the physician who is asked to give this estimate. Although it is true that many compensation boards have set definite percentage figures for specific anatomic and physiologic losses, there are many situations in which these predetermined figures do not hold, and the onus is placed on the physician to produce the figure. In our courts, there are no predetermined figures, and the per cent of disability is treated as though it were a fact capable of proof like any

other. If this is the situation and if we accept the arguments cited earlier in this paper that disability is the result of many factors, socio-economic as well as medical, then the averaged estimates of a jury of twelve persons is statistically more likely to approximate a true average than is the opinion of any one person. It should also be understood that if insurance carriers are going to use per cent of disability in determining the amount of monetary award, then for the reasons outlined above, they must also accept the responsibility for determining the per cent of disability.

I am not suggesting that the physician has no responsibility to the disabled individual. Indeed, he has a very important and essential role which cannot adequately be filled by anyone else. It is his responsibility, in as exact and clear a manner as he is able, to describe the anatomic and physiologic defects present in any injured individual whom he is asked to see and report upon. If the court or compensation board wishes the doctor to answer specific questions regarding the individual's ability to perform a given type of work or to engage in a particular social activity, he is obliged to answer, provided, of course, that he has sufficient information regarding the anatomic and physiologic requirements of the particular situation under consideration.

CONCLUSION

In summary, it has been shown that disability is the result of many factors, economic and social as well as medical. In consequence, the physician is no more capable of estimating a per cent of disability than is a non-medical person. Furthermore, arguments have been presented to support the premise that, although a physician may have an expert's knowledge of anatomy and physiology, he is not able to place a *valid* percentage figure on the contribution normally to be expected of a given anatomic structure or a particular body function. Therefore, it follows that even if disability were directly related to an alteration of a specific part or function, this cannot be used to determine the per cent of disability, since the per cent of function has no constant or real value.

The determination of the per cent of disability is the responsibility of our legislative bodies, compensation boards or any other authorities that assume the right to make financial awards for injuries or illnesses. The physician's duties are only to describe the anatomic and physiologic defects present in an injured individual, and to answer questions regarding the patient's ability to perform specific economic or social functions.

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Coming Meetings

CONTINENTAL U. S. AND CANADA

June 1-5	**Recent Advances in Clinical Nutrition,** Lemuel Shattuck Hospital, Boston.
June 8-9	**Rural Problems of Poisoning and Intoxication,** University of Nebraska College of Medicine, Omaha.
June 8-12	**Recent Progress in Endocrinology,** University of Washington School of Medicine, Seattle.
June 8-20	**Histochemistry,** University of Kansas Medical Center, Kansas City, Kansas.
June 13-19	**American Orthopaedic Association,** Vancouver.
June 14-19	**Interamerican Congress of Cardiology,** Montreal. Info: Jonathan Ballon, M.D., 2052 St. Catherine St. W., Suite 114, Montreal 25.
June 14-20	**Traineeship in Obstetrics and Gynecology,** University of Nebraska College of Medicine, Omaha.
June 14-20	**Traineeship in Surgery (traineeships restricted to physicians in general practice),** University of Nebraska College of Medicine, Omaha.
June 15-16	**Modern Concepts in the Therapy of Arthritis,** University of Colorado School of Medicine, Denver.
June 15-17	**American Neurological Association,** Claridge Hotel, Atlantic City.
June 15-19	**Psychiatry for the Internist,** University of Maryland School of Medicine, Baltimore.
June 17-19	**Arthritis and Rheumatic Diseases,** University of Colorado Medical Center, Denver.
June 18-19	**American Pediatric Society,** Olympic Western Hotel, Seattle.
June 18-20	**Society for Pediatric Research,** Olympic Hotel, Seattle.
June 18-21	**American Therapeutic Society,** St. Francis Hotel, San Francisco.
June 18-22	**American College of Chest Physicians,** Jack Tar Hotel, San Francisco.
June 19-20	**American Geriatrics Society,** Sir Francis Drake Hotel, San Francisco.
June 21-25	**American Medical Association,** Fairmont and Mark Hopkins Hotels and Civic Auditorium, San Francisco.
June 22-24	**Association for Research in Ophthalmology,** San Francisco.
July 6-9	**Ophthalmology,** Estes Park.
July 20-25	**Tenth Annual General Practice Review,** University of Colorado School of Medicine, Denver.
July 27-29	**Respiratory Allergy and Immunity,** Lake Tower Motel, Chicago.
July 29-31	**Three Days of Cardiology,** University of Colorado School of Medicine, Denver.

ABROAD

June 14-19	**Inter-American Congress of Cardiology,** Montreal. Sec-Gen: O. Gialloreto, M.D., Institut de Cardiologie, 5414 boul Assomption, Montreal 36.
June 15-20	**World Medical Association,** Helsinki, Finland. Sec-Gen: H. S. Gear, M.D., 10 Columbus Circle, New York 19.
June 21-27	**International Academy of Pathology,** London. Sec-Gen: F. K. Mostofi, M.D., Armed Forces Institute of Pathology, Washington 25, D. C.

The Future of the Practicing Physician And the Private Hospital

PAUL R. HANSON
Portland, Oregon

IT WOULD BE more than presumptuous of me, a layman, even to try to predict what changes in medical technics and professional care will evolve in the next decade. As a hospital administrator, however, I feel that the relationship of the practicing physician toward his private hospital and its administration has been experiencing and will continue to undergo remarkable changes. It is this broad segment of the practice of medicine that I wish to explore with you.

I believe it is fair to state that in the earlier part of this century, medical care was physician and office oriented, with the private hospital playing a minor but still an important role in the care of patients. Lack of transportation, lack of scientific skill, lack of hospital beds themselves—all these played roles in the creation of that status for the hospitals. During the past 25 years, the perfection of better surgical technics, the advent of antibiotics, the expansion of medical insurance programs, and the greater availability of hospital beds and trained personnel have all played their parts, to the point where hospitals today truly can be said to occupy the major role in community health programs. These developments, coupled with public insistence upon greater availability of specialty care and demands from the medical profession in the area of education, have helped to create further pressures for greater hospital facilities and trained personnel. Similarly, demands for increasingly exacting postgraduate education have led hospitals to increase internship and residency training to the point where the number of qualified and approved internships and residencies exceeds the number of American medical school graduates by at least two-fold. Exclude medical school hospitals and large county hospitals, and the ratio would be about four to one.

THE NUMBERS OF SALARIED PHYSICIANS ARE GROWING

While all of these obvious changes have been taking place, a much more subtle shift has occurred in the relationship between the practicing physician and the private hospital. By way of background, let us note that in 1939 the best estimates were that of the 145,000 licensed physicians in the country, only about 16,000 (12 per cent of the total physician population) received salaries from public or private institutions. A recent survey conducted by the American Medical Association and reported in MEDICAL ECONOMICS for June 17, 1963, revealed some rather startling facts. Of the 253,394 active, licensed physicians surveyed, 82,254 were in internship, residency and postgraduate training, or were members of medical faculties, in federal employ or in other full-time salaried positions. This left 171,140 supposedly in full-time private practice. However, the AMA survey indicated that at least 60,000 of this group were receiving all or part of their income from salaried positions. This means that 56 per cent of the American doctors of medicine derive all or part of their income from salaried positions. In the same survey, it was further determined that excluding those physicians who have no option at private practice (and numbered in this group would be interns, residents, fellows, and those in military or other federal jobs), 46 per cent of the so-called American private practitioners now receive at least part of their pay in the form of a hospital pay check. This set of facts alone makes one pause and take serious stock of the position of the private physician in relation to his hospital as of this moment.

In order that we may properly project the trend for the future, it is probably wise for us to reflect

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Mr. Hanson, formerly administrator at Iowa Lutheran Hospital, Des Moines, and now administrator at Emanuel Hospital, Portland, Oregon, made this address at a meeting of the Polk County Medical Society, in Des Moines, on December 18, 1963.

The trend that he outlines was well illustrated in the course of the negotiations between the Iowa Medical Society and Iowa Hospital Association, which culminated in 1957 with the passage of House File 21, which established the following points for the State of Iowa: 1) The law clearly establishes that a hospital cannot practice medicine in the State of Iowa. 2) It precludes an employer-employee relationship between a physician and a hospital. 3) It acknowledges that pathology and radiology are medical services. 4) It requires the inclusion of pathology and radiology in the medical service plan (Blue Shield), and not in the hospital plan (Blue Cross). 5) It requires that bills for pathology and radiology must be submitted in the name of the doctor. 6) It does not disturb the favorable Polk County District Court decision on hospital-physician relations which holds that corporations, including hospitals, cannot practice medicine in the State of Iowa.

for a moment on the factors which have brought about this rapid expansion in the number of salaried physicians. In 1939, the majority of salaried physicians fell into three major groups. The first were those in the process of education—notably, interns, residents, fellows, and the teachers responsible for their education such as full-time members of medical school faculties. The second group consisted of those whose practice more or less demanded intimate hospital association. These were primarily pathologists, roentgenologists and anesthesiologists. The third major group of salaried physicians included those who were involved in federal and state health services such as the military, public health, and the like. All of these three groups have expanded considerably in the last 25 years. The most notable growth has been in two major additional groupings—notably, the individuals responsible on a full- or part-time basis for postgraduate medical education in non-university atmospheres. These are, specifically, directors of medical education and full- or part-time department heads in non-university affiliated teaching hospitals. The second major group consists of physicians who have been hired by hospitals to complement or to substitute for house officers. These, primarily, take care of emergency services and outpatient facilities on a full- or part-time basis.

I am particularly interested in these last two groups of paid physicians. The problem of emergency-room coverage is one of our ever-present challenges. In private hospitals on the West Coast during the last 10 to 15 years, as closely as anyone can estimate, there has been a rise of between 300 and 400 per cent in emergency-room visits, particularly at night and on week-ends, and this increase continues. This growth, coupled with the fact that many attending physicians can't or won't provide voluntary service as they once did, has forced many hospitals into the position of discontinuing their emergency service, or as an alternative, hiring part-time or full-time physician personnel to staff the emergency room. In addition, the competition among private-hospital teaching programs has required hiring a full- or part-time physician, at each such institution, to carry out the amazing volume of administrative and paper work tasks that the busy attending physician cannot or will not take time from his private practice to perform. It is interesting to note that at present there are over 1,000 full-time directors of medical education in private hospitals throughout the country. All of these factors have contributed to the astounding increase in employment of full- or part-time physician personnel by the private hospital.

It then appears obvious that doctors themselves, with the good wishes and aid of the private hospitals, are ignoring the stigma that once attached to the position of hospital-salaried physician. Because of this practice and its remarkable increase, the whole problem is being re-studied by the American Medical Association's Committee on Medical Facilities. It is obvious that some revision in the AMA's policy toward this practice is long overdue, since its current policy criticizes the physician who will "dispose of his professional services under terms or conditions which permit their sale for a fee."

HOSPITAL STAFFS MUST DISCIPLINE THEMSELVES

The current emphasis on hospital-centered and salaried practice is viewed with alarm by many non-salaried private practitioners, and many are expressing concern over the possibility of the hospital's eventually dictating and supervising all medical practice.

As I have thought about these rather revolutionary changes in attitude toward the practice of medicine in hospitals, and about the causes and potential results of such changes, I have been reminded of a rather supercilious remark made by a character in Walt Kelley's well-known comic strip, "Pogo." He stated philosophically: "We have met the enemy and they are us." If this changing attitude toward full- or part-time salaried positions on private hospital staffs is bad, then all of us who have had anything to do with the shift are in some way to blame. Hospital administrators and lay boards may have been derelict in failing to discourage ill-usage and over-usage of hospital emergency room facilities. Similarly, we administrators may not have been energetic enough in our efforts to promote volunteer teaching and participation in staff activities by our private physicians. The attending physicians themselves—through reluctance, unwillingness or inability to provide emergency coverage in some areas—may inadvertently have promoted some of this change to salaried physicians. And in the same light, if this practice is wrong, the public itself is in part to blame, since some unthinking individuals place their own convenience beyond that of their attending physicians by insisting on emergency care during evenings, week-ends, and holidays for conditions that weren't truly emergencies.

The extensive programs of postgraduate medical education in some hospitals have required more time and effort than the attending physicians could reasonably devote to them. Therefore, hospitals have been forced either to scale down or discontinue their education plans or to hire physicians to fill the teaching and administrative positions that the programs required. This hospital-centered practice has naturally led to a growing fear that administrators will dominate doctors and dictate the manner in which they practice medicine.

A former president of the American Hospital Association sees the problem as an "emotionally charged conflict between the old philosophy of rugged individualism and the increasingly dominant

role of the hospital." At the center of this conflict, as that individual sees it, is the question: "Should the hospital be a controlling influence on doctors or merely an agent that helps them to do a better job?" Many hospital leaders, sensing the emerging role of hospitals as community health centers, feel that they must exercise increasing controls over private staff physicians in order to make sure that the quality of medicine stays as high as possible. This trend is reflected in increasingly exacting demands for staff self-discipline through the mechanisms of tissue committees, medical audit committees, staff advisory and credentials committees, and in some instances utilization committees and the like. In a few isolated instances, hospitals have appointed committees to study fees, utilization and mal-utilization of laboratory and other ancillary facilities. All of these measures have prompted many physicians to feel that their personal freedoms are being abridged, and they have threatened and even carried out campaigns of non-compliance with hospital rules and regulations. This, of course, right or wrong, does nothing to cement harmonious relations between hospital administrative staffs and the attending physicians. Pathetically, some administrators are wont to explain their seeming intervention in medical matters on the basis that their measures are necessary to the maintenance of hospital accreditation. Similarly, some administrators feel that their increasing interest in the manner in which medicine is practiced in their own hospitals is best justified by the necessity of keeping hospital costs down.

In general, I firmly believe lay hospital administrators will agree that the disciplining of doctors who fail to conform to the standards required by the Joint Commission on Accreditation, as well as to the staff's own rules and regulations, *should and must* be a function of the medical staff. It is only when these disciplinary bodies fail in their tasks that administrators and lay boards of trustees feel justified in taking any action, and then only reluctantly. This was nicely summarized recently by an Illinois hospital administrator in these words: "Hospitals are being challenged to improve standards of care and efficiency from all sides—by government, by big health-insurance buyers, by a more sophisticated public. Closer supervision over staff doctors' work is inevitable. If staff doctors refuse this responsibility, some other agency, most logically hospital administrations, will take it over, but most administrators *fervently* hope that the the doctors will assume it themselves."

The essence of the matter of auditing, policing and supervising the clinical work carried out by the members of a medical staff is of necessity the holding to rigid high standards of medical care in all hospitals throughout the country. The public demands and deserves nothing else. It is entitled to all the advantages of modern medicine. I feel, as I am sure you do, that these functions should and must be functions of the physicians themselves. If they can carry out this task efficiently and unremittingly, little in the way of administrative control from the outside is necessary. When lay administrators have been forced into this position, I feel it is most commonly to fill a void created by medical staff members who have refused or have been reluctant to accept such a responsibility.

DOCTORS HAVE A RESPONSIBILITY IN KEEPING HOSPITAL COSTS DOWN

I cannot go further in this discussion without touching for a moment on the economics of adequate patient care in today's private hospital. Just as good medical care is seldom cheap, cheap medical care is seldom good. I am sure the majority of us are aware of the impact on hospital costs of increasing labor demands, increasingly expensive diagnostic and therapeutic equipment and facilities, and the need for highly trained personnel to operate them. If not, however, permit me to use the hospital with which I am associated as an example, since I happen to be best informed concerning its operation and development. In 1936, the hospital had an average of one employee for every two patients occupying beds. Today, it employs 2.4 employees for each patient, or nearly five employees for every two patients occupying beds. In 1936, 70 per cent of the total area of the hospital was utilized for patients' beds and 30 per cent for ancillary services. Today, this ratio has been almost reversed. Now we utilize 65 per cent of our area for ancillary services and 35 per cent for patients' beds. In 1936, payroll accounted for 35.6 per cent of the hospital's total expenditures. Today 65.5 per cent of the total cost of operation is for payroll. In the past 10 years, the hospital has expended $6,470,000 for capital improvements—new buildings, remodeling, and equipment, technical and otherwise. In the last four years, $3,707,000 of this amount was spent for capital improvements—new buildings and remodeling of old to accommodate new services and much new technical equipment—and with a net increase of just 33 patient beds.

In recent years, the costs of operating our hospitals have increased at the rate of approximately 5 per cent per annum, and predictions for the future indicate a continuance of this situation. This is the price of providing modern medicine to the public in our country. Therefore, under these circumstances, it becomes vitally important for all of us associated with the healing arts to miss no opportunity in finding and carrying out any economy that can be exercised, consistent with good patient care. The private physician plays a most important role in this regard, particularly in the areas of avoidance of mal-use, or needlessly prolonged use of hospital facilities, avoidance of mal-utilization of x-ray and laboratory facilities of all

types, and avoidance of using special services at inconvenient or uneconomical times.

It also becomes evident that in the planning of new facilities and services, doctors, hospital governing boards and administrators must be careful to avoid duplication of uneconomical installations within a given community.

Finally, in the broadest sense, the private practicing physician and those of us involved in hospital administration must join in giving increased attention to the needs of our society. Two large groups to whom we must pay careful attention are the medically-indigent and that segment of the aged population whose limited resources and fixed incomes do not allow for adequate medical care. It is obvious that it is not going to be enough merely to oppose intrusion by the federal government in these fields. Such intrusion is much better blunted by an active and progressive program endorsed and enthusiastically supported by the medical profession, as well as hospital administrators and insurance companies.

CONCLUSION

In summary, the future of the practicing physician and the hospital in which he practices is going to be determined in large measure, not by the federal government, insurance companies or hospital administrators, but by physicians themselves. The public who are your patients demand and must receive consistently high medical care at your hands.

The cold facts of our existence seem to indicate that medical practice is becoming increasingly hospital-centered. The demands of postgraduate education, full-time and adequate emergency care, as well as increasingly exacting complex diagnostic and therapeutic procedures—all these will require a considerable increase in the number of full- or part-time salaried physicians working in hospitals. This practice demands some re-evaluation, on the part of all doctors and the hospitals, of what constitutes the best brand of medicine. These salaried physicians can represent a threat to your practice or an aid in your practice, depending upon your attitude and your utilization of them.

Increasing and persistent contributions by all physicians to postgraduate education, and the attainment and maintenance of the highest possible standards of the practice of medicine in our hospitals will continue to require policing and supervision of all professional activities by the doctors themselves. Only if physicians fail in this responsibility, will third party controls ever be necessary. This will not be easy for you or for me, but the prize for carrying them out is the preservation of the finest system of private medicine the world has ever seen.

These values were eloquently stated by the late Theodore Roosevelt at the turn of the century, when he commented: "It is not the critic who counts, not the man who points out how the strong man stumbled, or where the doer of deeds could have done them better. The credit belongs to the man who was actually in the arena, whose face is marred by dust, and sweat and blood, who strives valiantly, who errs and comes short again and again, who knows the great enthusiasms, the great devotions, and spends himself in a worthy cause, who at best knows in the end the triumph of high achievement, and who at worst, if he fails, at least fails while daring greatly so that his place shall never be with those cold and timid souls who know neither victory nor defeat."



Ten physicians attended the IMS past-presidents' dinner on April 27. From left to right, they are Dr. Walter Abbott, Des Moines; Dr. Fred Sternagel, West Des Moines; Dr. Robert L. Parker, Des Moines; Dr. Ben Whitaker, Boone; Dr. George Scanlon, Iowa City; Dr. John Billingsley, Newton; Dr. Wendell Downing, LeMars; Dr. Otto Glesne, Fort Dodge; Dr. Charles V. Edwards, Sr., Council Bluffs; and Dr. Eugene VanEpps, Iowa City.



Dr. George H. Scanlon (left), of Iowa City, received an unprecedented recognition, a "Meritorious Service Award," at the IMS annual banquet on April 28. The presentation was made by Dr. Charles V. Edwards, Sr., president of the Society. Dr. Scanlon was chairman of the IMS Board of Trustees for several years; he founded and has had a major share in operating the Society's loan fund for medical students; he was president of the Society last year; and as chairman of the Board of Blue Shield he has helped to represent the physicians' point of view in that organization.



Mr. Donald L. Taylor, in his seventeenth year as executive director of the IMS, received the Dr. John H. Sanford Award at the 1964 annual banquet. Dr. S. P. Leinbach is shown making the presentation, while the president-elect of the Society, Dr. Otis D. Wolfe, of Marshalltown, looks on. Dr. Sanford was the first IMS president, and the award given in his name is presented to laymen who have contributed significantly to medicine.

Scientific Articles

The Grading and Typing of Carcinoma of the Breast

MALCOLM B. DOCKERTY, M.D.
Rochester, Minnesota

ALTHOUGH THE RESULTS of treatment for carcinoma of the breast have improved greatly during the last 75 years, this dreaded form of cancer still kills about 50 per cent of its victims over a five-year period in the average series of cases reported. This mortality occurs in spite of the increased alertness of an educated public to the perils of delay in diagnosis, and in spite of the fact that the breast is an organ in which malignant lesions should be amenable to early detection. This paper attempts to analyze certain of the factors which influence the spread of breast cancer and also certain of those which influence its containment. It does not presume to include all of the factors involved. It does not attempt to explain why breast lesions of similar gross and microscopic configurations behave so differently in different persons. However, through the application of principles contained in the observations which follow, one can project an "average" period of life-expectancy for a given set of gross and microscopic parameters in a patient with a carcinoma of the breast.

CRITERIA FOR PROGNOSIS

One prognostic yardstick is based on grading, so let us consider the type of microscopic classification embodied in the grading method of Broders (Figure 1). A malignant epithelial growth is recognized as such because its cells exhibit departures from what is considered to be normal appearance. These departures are histologic and cytologic. On the one hand, there may be very pronounced departure from normal (grade 4); on the other hand, the majority of the cells may show a rather striking resemblance to their ancestors in the mammary ducts and acini (grade 1). It so happens that mammary cancers tend to be of grade 3 or grade 4 in 85 per cent of cases. Only 5 per cent of breast cancers are grade 1, and only 10 per cent are grade 2 lesions.

When we correlate the grade of the lesion with the incidence of axillary and mediastinal nodal involvement, we find that the grade 4 lesions metastasize in 85 per cent of cases, whereas the corresponding proportion for grade 1 lesions is only 5 per cent. The five-year survival rate is only 20 per cent for grade 4 carcinomas with positive nodes, but it is 95 per cent for grade 1 mammary adenocarcinomas that are confined to the breast.

It should be mentioned at this point that the various special types of breast carcinoma to be described presently can be graded easily, and that according to this concept, all breast cancers, arising as they do from glandular and ductal epithelium, are basically adenocarcinomas. This makes for tremendous simplification in the classifying of breast lesions.

The projection of prognosis in terms of biologic behavior of breast cancer requires also that we recognize certain "species" of growths which, grade for grade, produce variations from the "average" prognosis for patients with the ordinary mammary cancer which is a scirrhous growth. A few of these species are described and illustrated in Figures 1 to 8.

Dr. Dockerty is a staff member in the Section of Surgical Pathology at the Mayo Clinic and Mayo Foundation. He made this presentation at the meeting of the Iowa Medical Society, in Des Moines, on April 8, 1963.

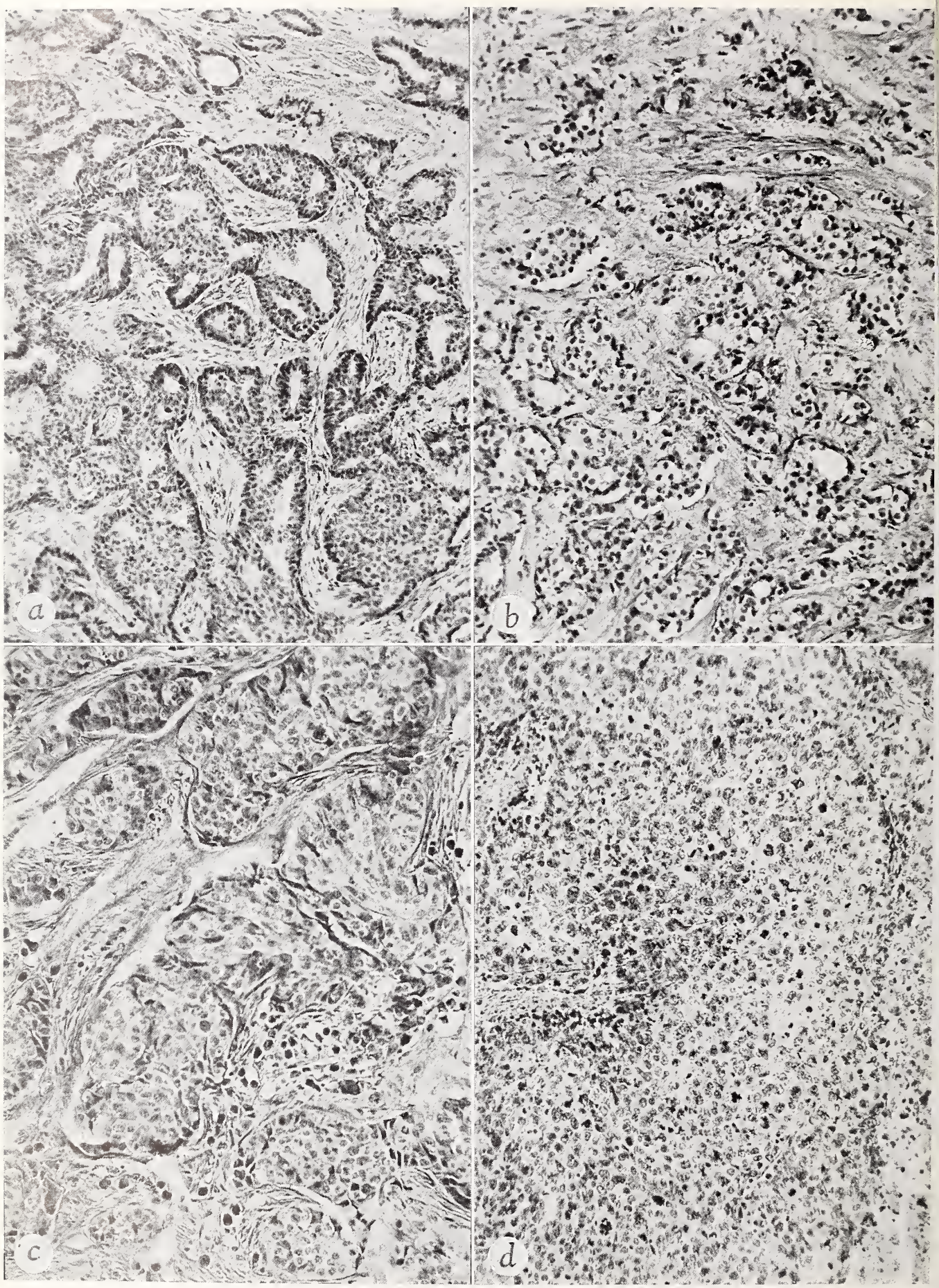


Figure 1. (a) Grade 1 adenocarcinoma of the breast. Lesion features what we might term cancer's self control, for in it we observe a strong histologic similarity between the malignant ducts and acini and their "opposite numbers" in the normal breast (hematoxylin and eosin; X125). (b) Grade 2 mammary adenocarcinoma. The attempt at producing glandlike structures is still apparent, but the constituent epithelial elements are more variable in size and shape than in the grade 1 lesions (hematoxylin and eosin; X125). (c) Grade 3 mammary adenocarcinoma. Here the arrangement is more alveolar than ductular, but some degree of control is still apparent in the cohesiveness of the cellular clumps (hematoxylin and eosin; X125). (d) Grade 4 mammary adenocarcinoma. Here, little organoid structure is discernible. Many of the darker cells are in mitosis (hematoxylin and eosin; X125).

ENCAPSULATED CARCINOMA

The first species that we shall consider is one in which, for some reason possibly related to host resistance, the cancer appears to be encapsulated. This type occurs with an incidence of between 1 and 2 per cent, and in the some 60 cases that I have been privileged to study,[1] the lesions frequently were associated with chronic cystic mastitis. In about 40 per cent of the lesions, microscopic delineation was partly effected by the presence of a chronic inflammatory barrier. Lymph nodal involvement was found in only 21 per cent of cases, and the overall five-year survival rate was about 70 per cent. The presence of a pronounced inflammatory infiltrate improved these figures by an additional 20 per cent.

This growth is of clinical importance in that it is likely to be mistaken for fibroadenoma or cyst of the breast.

CYSTADENOCARCINOMA

Most cancers of the breast are solid infiltrating growths; but, in a series of 9,000 cases studied by Drs. Gatchell and Clagett and me,[2] there were about 50 instances in which the growth was almost entirely cystic. Several were multiple, and thus the difficulties of differential diagnosis were further compounded. The lesion occurred cen-

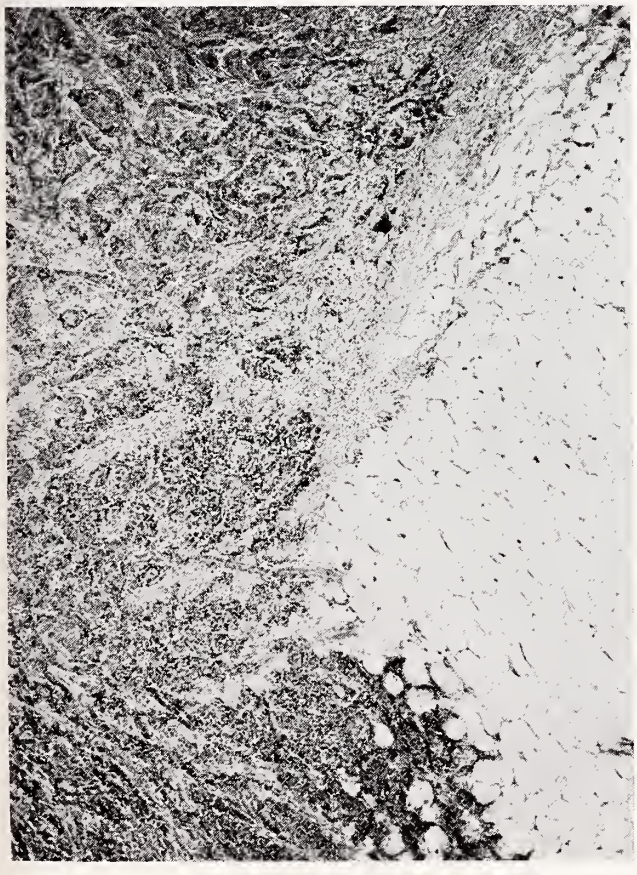


Figure 2. Advancing edge of an encapsulated cancer. Such sharp delineation indicates a good prognosis (hematoxylin and eosin; X55).

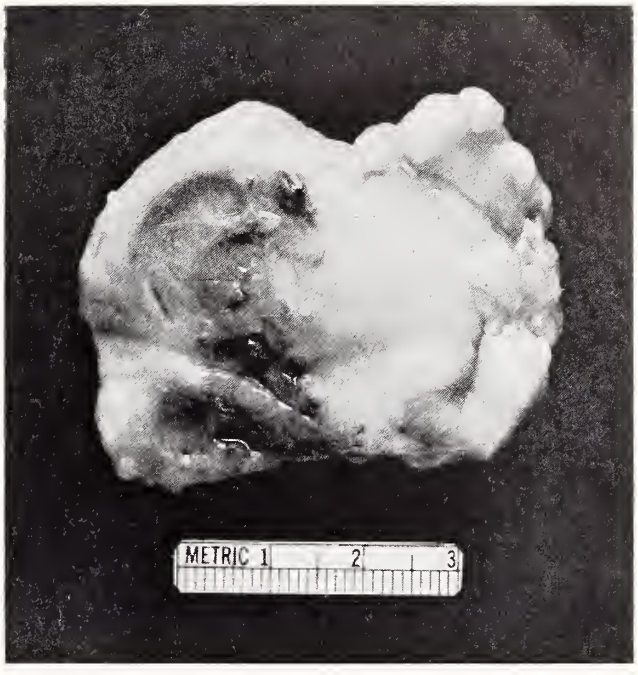


Figure 3. Mammary carcinoma growing inside a cyst of the breast. Prognosis is good if the condition is not mistakenly treated as a benign lesion.



Figure 4. Ductal carcinoma (comedocarcinoma) of the breast, showing good reproduction of acini in an intraductal cribriform pattern. Often multicentric, this "species," which at times involves lobules as well as ducts, tends to maintain an in situ status for years (hematoxylin and eosin; X60).

trally in 40 per cent of instances, and in almost a third of the patients there was a discharge from the nipple in addition to a lump in the breast. Grossly, the appearance was usually that of a mass of malignant tissue growing on the inside of a cyst, but in a number of instances, there was evidence of involvement of breast tissue beyond the confines of the cyst itself.

Microscopically, 60 per cent of these growths were papillary, and frequently these were of a low order of malignancy. In fact, the Broders rating on these tumors showed a distribution almost the reverse of that exhibited by a comparison series of noncystic neoplasms. A low incidence (10 per cent) of metastasis to axillary nodes contributed materially to the good prognosis for these patients. The overall five-year survival rate was 83 per cent.

OCCULT CARCINOMA

Even when cancer has already spread to an axillary node by the time the patient first comes to the physician, the seriousness of the situation may be modified if the primary growth happens to be a so-called occult mammary carcinoma. Such was the situation in 25 patients studied by Drs. Owen and Gray and me.[3] The presence of metastatic adenocarcinoma in the axilla necessitated removal of the ipsilateral breast as a "blind" procedure, inasmuch as no tumor could be palpated therein. In almost all instances, the tumors were less than 1 cm. in diameter and were situated deep in the substance of the breast. Most of them were comedomedullary carcinomas. Several were encapsulated. The surprising feature, to us, was the fact that nine of 18 patients who were eligible for five-year follow-up studies passed this magic mark —a surprising result in cases of mammary carcinoma with axillary metastasis.

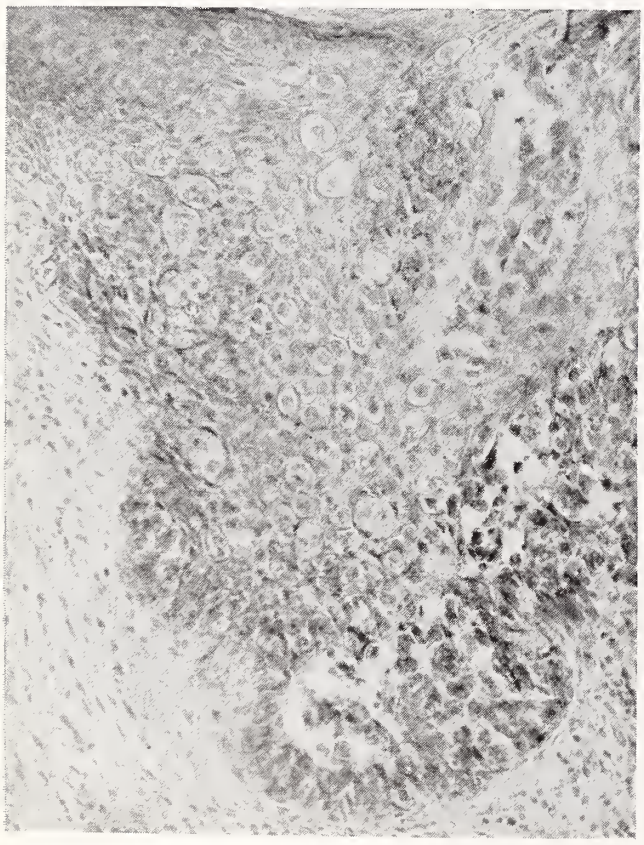


Figure 5. Paget's disease of the nipple represents an intraepithelial metastasis, usually from an underlying duct or comedocarcinoma. Carcinoma cells appear pale in the section of skin. Paget's disease is often a slow-growing "species" of mammary carcinoma (hematoxylin and eosin; X120).



Figure 6. Occult carcinoma (so-called), a solitary large axillary metastasis from a diminutive primary growth. Radical mastectomy cures 50 per cent of cases of this particular "species."

COMEDOCARCINOMA AND PAGET'S DISEASE

Ninety-five per cent of breast carcinomas originate from ducts. In 90 per cent of these cases, the wall of the duct is breached early, and the growth presents clinically as an ordinary cancerous lump with characteristic dimpling of the skin. In the remaining 10 per cent of cases, from 75 to 100 per cent of the cancerous tissue is contained within a ductal barrier, and the term "comedocarcinoma" has been applied to this situation. Also, in about 5 per cent of this remaining 10 per cent of cases, the lesion will be *entirely* confined within the ducts of origin and will represent a carcinoma *in situ*. This group includes a "subspecies" termed lobular carcinoma *in situ* which, in our experience,[4] practically always shows ductal as well as lobular involvement. About one in five of these will be associated with intracutaneous metastasis, and such cases exhibit the clinical and pathologic picture which we know as Paget's disease. The remainder will reveal varying degrees of breaching of the ductal walls—sometimes with the formation of sizeable masses showing scirrhous, medullary and mucous features.

In a study of this type of cancer,[5] it was found that a fair number of the lesions were papillary, and when compared to an unselected group of



Figure 7. Mucous adenocarcinomas such as this lesion often spread slowly in spite of their bulky dimensions.

cases of neoplasm, three times as many were of a low order of malignancy. In general, comedocarcinomas tend to be multicentric; often they are diffuse. In 10 per cent of these cases,[5] the process appears as a bilateral breast lesion—either simultaneously or metachronously. Yet, comparatively speaking, in spite of bilateral occurrence, in spite of diffuseness, and in spite of skin metastasis, this species of carcinoma behaves as a "cancer in slow motion." In our study,[5] the five-year survival rate in a group of 225 cases was 70 per cent.

MUCOUS CARCINOMA

The literature suggests that cancers of the breast double in size over a given period of time and that a large primary growth connotes a bad prognosis. Such is anything but the case when we are dealing with a mucous or gelatinous carcinoma, a lesion which makes up from 5 to 10 per cent of any sizeable series of mammary cancers. In 100 such cases, studied by Waggoner and me,[6] the volume of the average mucous adenocarcinoma was 33 cu. cm., and of the largest, 284 cu. cm.

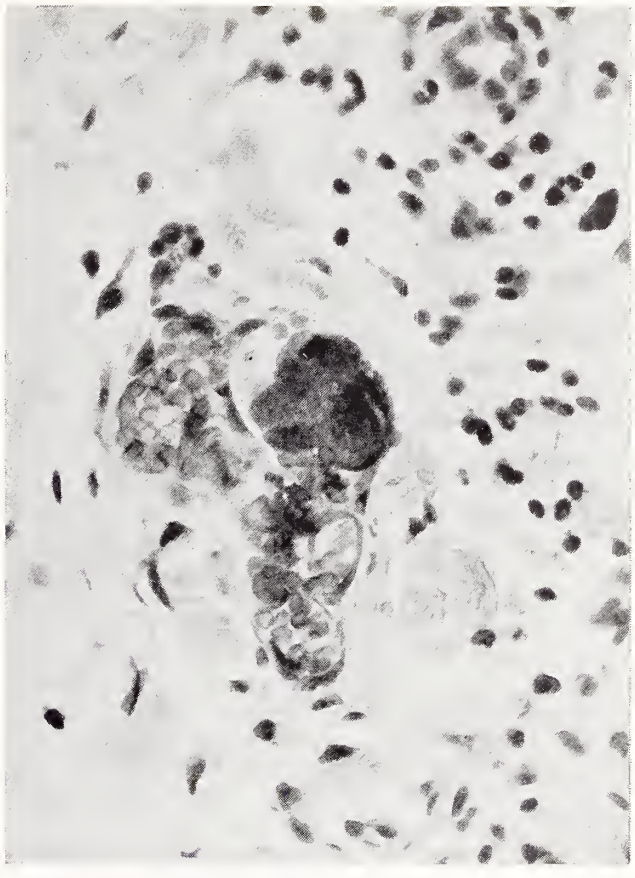


Figure 8. Increase in the size of a breast harboring "inflammatory cancer" is due largely to malignant permeation of skin lymphatics, as shown. Stasis of blood in capillaries and venules induces the local heat and redness observed clinically (hematoxylin and eosin; X475).

These lesions occurred, for the most part, in older women, and on an average, they were of a lower grade of malignancy than were the non-mucus-producing neoplasms of the comparison group. This reflected a somewhat lowered incidence of axillary metastasis and an unexpectedly good prognosis in spite of the bulky mass of the primary growths.

INFLAMMATORY CANCER

Inflammatory cancer characteristically produces not only enlargement but also redness and edema of the involved breast. As with mucous cancer, the primary growth is likely to be fairly bulky; however, most of the mammary swelling observed clinically is due to the presence of extensive axillary involvement with retrograde lymphatic spread along the ligaments of Cooper. Lymphedema contributes in major degree to the swelling, and capillary and venous stasis cause the redness which gives the designation "inflammatory" to the lesion.[7] The Broders grade is high, lymph-nodal involvement almost always is massive, and wide permeation of cutaneous lymphatics often produces a terminal cancerization of the skin across to the opposite side. With this type of mammary cancer, five-year survivals are so few that many

surgeons believe that the lesion is categorically inoperable. Barber, Clagett and I[8] recently reported a 10 per cent five-year salvage in a group of 45 patients with this form of breast cancer which accounted for 1.7 per cent of all primary mammary malignant neoplasms observed during a 10-year period.

SUMMARY

The prognosis of mammary carcinoma depends, in part, on the aggressiveness of the growth and on certain resistance factors of the host. The pathologist can help in the assessment of a patient's chances by grading the lesion by some method, such as that of Broders, and by recording the species of the carcinoma. Both parameters are related to the incidence of axillary and other metastatic involvements, and serve as yardsticks in estimating prognosis.

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Percutaneous Transhepatic Cholangiography

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RADIOGRAPHIC ASSISTANCE in the differentiation of surgical obstructive jaundice from non-obstructive or medical jaundice has been quite limited. With only a few exceptions, indeed, oral cholecystography and intravenous cholangiography have been of little value in the presence of jaundice, either medical or surgical. At most, barium studies of the upper gastrointestinal tract afford indirect evidence of the cause of jaundice, by demonstrating extrinsic masses. At the same time, laboratory test results may be equivocal, particularly if the jaundice is long-standing. For these reasons, percutaneous transhepatic cholangiography has been useful in demonstrating the nature of several types of obstructive jaundice, and preoperatively it has provided the surgeon some information that is valuable to him in planning his corrective procedure. Since the radiographs are obtained in the radiology department with the Potter-Bucky grid and high milliamperage x-ray generator, they are of high technical quality and provide good definition of structures.

Evans,[1] in his review of the world literature, credits Huard and Du-Xuan Hop with having made the first successful percutaneous puncture of the bile ducts for radiographic purposes in 1937. Current interest in the procedure stems from a 1952 report by Carter and Saypol,[2] who were the first to describe the procedure in the English literature. Two excellent reports based on large series of cases have been those by Glenn and Evans[4] and by Arner, Hagberg and Seldinger.[3]

Dr. Levis is a resident in the Department of Radiology at the S.U.I. College of Medicine.

PROCEDURE

At present, any patient with obstructive jaundice or suspected obstructive jaundice is a candidate for percutaneous puncture of the bile ducts. The decision to perform the examination is reached conjointly by the radiologist and the referring surgeon. Subsequently, laparotomy is scheduled within 24 hours, if an obstructive cause has been found. The patient's bloodclotting mechanism should be normal, or under treatment to bring it to an optimal level. The patient is fasted for eight hours before the procedure. Premedication with Demerol and/or a barbiturate is given one hour prior to the puncture. The procedure is explained to the patient in advance, for his full cooperation is needed.

Aseptic technic is maintained throughout the operation. The skin over the right upper quadrant is prepared and draped, and one per cent Xylocaine is infiltrated into the skin at the site of the planned puncture. A six-inch 20 gauge needle, with stylet in place, is introduced through the skin below the right costal margin in the mid-clavicular line. The needle is directed towards the left midclavicle at a 45° cephalad angle. Entrance into the

liver is usually detectable from the firm resistance offered to needle advancement. The needle is advanced into the liver substance to a depth of 7 to 9 cm., and the stylet is removed. Gentle aspiration is appled as the needle is slowly withdrawn. When the duct system is dilated, backflow of bile usually is readily obtained. From 20 to 50 cc. of bile is removed, and enough 50 per cent Hypaque is slowly injected so as to outline the biliary tree.

If the above procedure is unsuccessful, a change in technic is necessary. Once the needle enters the liver, the stylet is removed, and contrast material is slowly injected as the needle is advanced. Television fluoroscopic monitoring has been quite useful in checking the placement of the needle and in observing the contrast material. Conventional fluoroscopy can also be used, but it is less desirable for it requires a darkened room, and the eyes of the operator must have adapted themselves for dark-room vision. As the contrast material is injected, any one of three patterns will be seen. There may be a puddle around the needle, as evidence of parenchymal extravasation. The contrast material may enter the blood vascular system, and if so it will be seen rapidly flowing away in the vessels. If the material has entered the bile ducts, it will be seen that they are filled in the same manner as before. If visualization of the biliary tree is unsuccessful, a total of four to five punctures are performed before the attempts are discontinued.

Radiographs are obtained in antero-posterior positions. Lateral and oblique films may also be made. When a greatly dilated biliary system is encountered, delayed films are helpful. With time, the contrast material diffuses and mixes with the bile so as to outline the significant findings more satisfactorily. In completing the procedure, as much of the bile and contrast material as possible is removed. A final film is then made, to show the residual contrast material and to aid in the interpretation of later operative cholangiograms. We have been able to remove an average of 90 cc. of bile from each patient, but in one patient 400 cc. was removed from a greatly dilated ductile system and gallbladder.

RESULTS

The procedure has been attempted on 13 occasions at the University Hospitals. In nine cases the procedure was successful, demonstrating a dilated biliary system and the site of obstruction. Five of the patients were found, at surgery, to have carcinoma of the pancreas, with a complete block of the common duct. The site of obstruction



Figure 1. Carcinoma of the pancreas, with metastases causing a complete block at the lower hilus. Grossly dilated and ectatic intrahepatic biliary radicles are visualized.



Figure 2. An incomplete block of the distal common duct caused by a radiolucent calculus. Some contrast material is seen in the duodenum. Multiple radiolucent stones are seen in the gallbladder.

ranged from the distal common duct to a point high in the liver hilus at the bifurcation of the right and left hepatic ducts. Figure 1 is a film that demonstrated a block high in the liver hilus.

Figure 2 demonstrated an incomplete block of the common duct by a radiolucent calculus. The concave margin of the contrast material about the filling defect facilitated a correct preoperative diagnosis of calculus. In addition, multiple radiolucent stones were revealed in the gallbladder.

Figure 3 demonstrated an extrinsic mass displacing the common duct laterally and producing a smooth, curvilinear margin. A small amount of contrast material outlined the narrowed portion of the common duct and passed into the duodenum. A previous upper-gastrointestinal series had shown a duodenal ulcer. At surgery the duodenal ulcer was found to have penetrated into the pancreas, and the resulting inflammatory reaction had caused the displacement of the common duct.

Another patient had an apparent postoperative stricture of the common duct. A successful procedure demonstrated an incomplete stricture at the level of the right and left hepatic ducts.

The last patient also demonstrated a block high in the liver hilus. The intrahepatic ducts were dilated, and numerous irregular, linear radiolucencies were visible within the contrast material. At surgery, a primary carcinoma of the bile ducts was found, with both tumor tissue and bile sludge within the biliary system.

Of the four unsuccessful procedures, two were performed on the same patient on separate occasions. This patient was not jaundiced and probably did not have a dilated biliary system. She was being studied for a postcholecystectomy syndrome. Another patient was known to have carcinoma of the colon, was jaundiced and was thought to have metastasis. The procedure was undertaken in an attempt to differentiate between an obstructive jaundice and a diffuse metastatic disease of the liver. The fourth technical failure occurred in a patient who had been jaundiced approximately 12 days prior to the procedure. Later, at operation, a common duct stone was found at the ampulla of Vater. The cystic duct had been dilated, but not the common or hepatic ducts, and that circumstance probably accounted for the failure.



Figure 3. An extrinsic mass causing incomplete obstruction but sufficient to cause clinical jaundice. The displaced common duct and dilated biliary system are visualized.

DISCUSSION

From our work and from that of others, the procedure would seem helpful in identifying obstructive jaundice of obscure cause. Specifically, it has proved useful in:

(1) demonstrating obstructive lesions in carcinoma of the pancreas;
(2) demonstrating obstruction from carcinoma of the bile ducts;
(3) demonstrating displacement and obstruction from extrinsic non-neoplastic masses;
(4) demonstrating the status of the biliary tree in postoperative strictures;
(5) demonstrating the site of obstructive ductile calculi.

In the presence of a dilated ductile system and an enlarged and palpable liver, the procedure is generally successful. Seldinger[3] achieved diagnostic visualization of the biliary tree in 89 per cent of 105 cases with an obstructive lesion and dilated bile ducts. He had a 50 per cent success rate in patients who did not have dilated bile ducts.

We have had no complications of any clinical significance. In one patient, a 3 cm. hematoma of the subcapsular portion of the liver was found. A review by Evans[1] of 334 cases showed a mortality rate of 0.6 per cent, and a 3 per cent incidence of peritoneal bile leakage. Seldinger[3] reported a small amount of bile in the peritoneal cavity in four cases, and hemorrhages of 300 cc. and 500 cc., respectively, in two of 105 attempted examinations.

SUMMARY

Percutaneous transhepatic cholangiography is a valuable technic in the differential diagnosis of jaundice of obscure origin. It is not a substitute for simpler, conventional examinations, and should be undertaken only in carefully selected patients.

ADDENDUM

I would like to express my appreciation to Dr. E. F. Van Epps, chief of the Department of Radiology, for his support of this procedure. Dr. Harry

W. Fischer, head of the Diagnostic Section of Radiology, reviewed the manuscript and offered many helpful suggestions. I would like to thank all of the residents in the Department of Radiology who participated in this procedure, and particularly Dr. Benjamin Broghammer, a former resident, who performed this procedure first in this hospital. To Dr. John A. Gius, professor of surgery, and to the surgery residents, my thanks for their help in securing patients for this study.

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Facial Prostheses

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THE MEDICAL ART DEPARTMENT at University Hospitals fabricates all facial prostheses in cooperation with the S.U.I. Departments of Surgery and Otolaryngology. However, prostheses which include the eye are fabricated by the artists in the Department of Ophthalmology.

The term "facial prosthesis" ordinarily is used in reference to a sculptured reconstruction of a defect so as to create a normal appearance for cosmetic purposes only. A properly made facial prosthesis, however, can be more than a cosmetic reconstruction. It can be a functional appliance, by providing protection from cold air and dirt, by assisting in the retention of another appliance and by serving as an aid to respiration and speech.

Congenital malformations, surgical removals of malignant growths, injuries incurred in accidents on highways and in industry, dog bites, gunshot wounds, and fires are the most common causes of facial disfigurement (Figure 1).

SELECTION OF PATIENTS

The possibility of immediate correction for a facial disfigurement is of primary concern to a patient or parent. In most instances, this can be successfully accomplished by means of plastic surgery, but there are circumstances in which a prosthesis is the only possible remedy. These include an unfavorable age and physical condition of the patient, a possibility of recurrence of the disease, a deterioration or inadequacy of the tissue involved, a need for temporary replacement until plastic surgery is indicated, an extraordinary size of the defect, the possibility that surgery will give a poor cosmetic result, a dissatisfaction with previous surgery, an excessive financial burden, a lack of time, and a fear of operation.

Most conspicuous failures of cosmetic prostheses can be attributed to a lack of artistic skill in their construction or in the choice of materials, and insufficient cooperation between surgeon and prosthetist in planning the surgery that was necessary before the prosthesis was constructed.

In general, the success of a prosthesis depends upon the extent of the surgery and its relation to the function, construction and retention of the prosthesis. Many unfortunate postoperative problems can be avoided if the surgeon is aware of the difficulties he may create when he leaves a tag of the ala of the nose or of the lobe of an ear. It is not always necessary to leave tissue as an aid in retention. In fact, this tissue may hinder retention and cosmetic success. We consider it imperative that the surgeon, the dentist and the medical artist work as a team. When each contributes according to his recognized ability, the function and esthetic naturalness of the prosthesis can be improved.[1]

EDUCATION OF THE PATIENT

Education of the patient is an essential factor. One should be conservative in predicting the final verisimilitude and efficiency of the prosthesis. Past experience with other cases, materials, and methods of construction and retention, and the proper technics to be used in caring for the prosthesis should be discussed.

The knowledge that a duplicate of the final prosthesis and the mold from which it was fashioned will be retained for future use can add to the patient's confidence in the decision he needs to make. In many instances, we see a patient wearing a prosthesis that is conspicuous because its color does not harmonize with that of the surrounding tissue. In some cases, the patient is unaware of the color difference, or seems to be satisfied with the discrepancy. Lack of color harmony can have resulted from the action of sunlight or chemicals on the materials or pigments used in

Mr. Ver Vais is director of the Medical Art Department at University Hospitals. The work he describes has been partially supported by Grant Q762, National Institute of Dental Research.

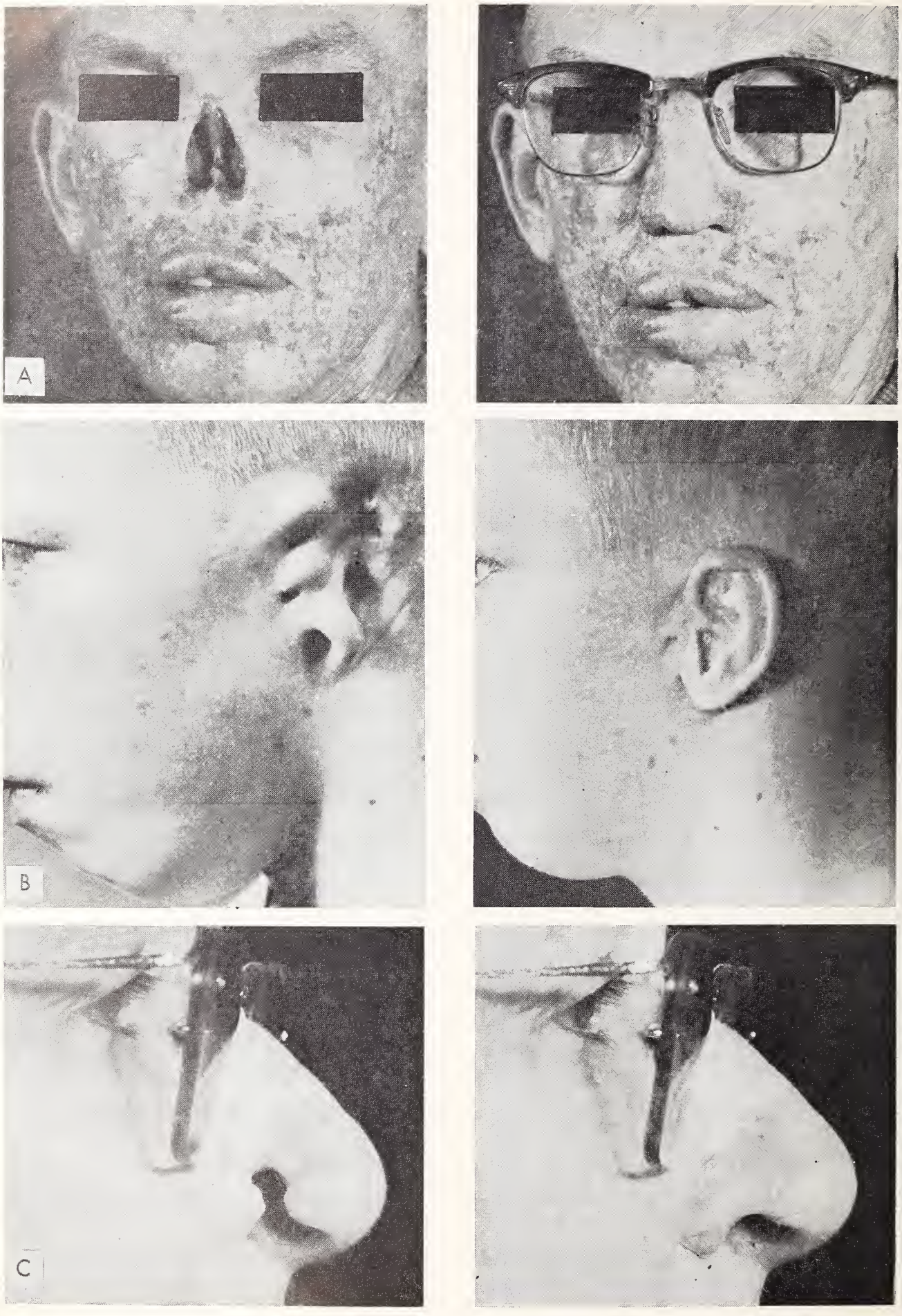


Figure 1. A and C are representative examples of cases where the condition of the skin made the fabrication of a prosthesis desirable. B is representative of a congenital malformation of the ear.

constructing the prosthesis, or from a lack of artistic skill in painting it. With the passage of time, color changes in the patient's skin or in the prosthetic materials do occur, and a need for recoloring at a later date should be anticipated. At the present time, our research seems to indicate that the silicones are less subject to color change than the harder acrylics have been, but more research is needed for an adequate evaluation of them in this regard. The patient should also be told that a permanent prosthesis cannot be constructed until the surgeon has determined that the tissue has healed and that no further distortion of the tissue can be expected.

Congenital malformation of the external ear has been estimated to occur in approximately one out of 20,000 births.[2] When a child needing an auricular prosthesis is referred to the Department of Otolaryngology at the University Hospitals, the surgeon and the medical artist discuss the case with the parents. Most such children are between four and 10 years of age. Some have undergone one or more plastic surgical procedures designed to correct the deformity, but these have produced unsatisfactory cosmetic results. Before recommending the construction of a prosthesis, we consider the mental age of the child and his ability to adjust to a prosthesis and to wear it intelligently. We try to determine whether the child really wants the prosthesis, or if it is the parent who wants it for his child. We believe that most children under 12 years of age cannot wear prostheses with confidence and take care of them properly. We must be aware of the possibility of creating a greater problem for the child than the one he has endured as a result of the defect.

The degree of deformity, the possible necessity of surgical relocation or removal of the malformed tissue, as well as the patient's current and future activities, such as participation in sports, must also be taken into consideration.

If it is determined that a prosthesis can be constructed, the psychologically ideal time is during a vacation period or when a child is in the process of transferring from one school to another.

METHODS AND MATERIALS

If surgical relocation or removal of tissue is indicated in preparation for the construction and fitting of an auricular prosthesis, several casts, measurements and tracings of both the normal and the malformed ear are made. These are used in explaining the problem to the parents and in determining the extent of any necessary surgery. Actual construction of the prosthesis cannot begin until the tissue has healed satisfactorily.

At the present time, we are using self-curing acrylic or silicone for our prostheses. The acrylic is a very durable, non-flexible material that can be made thin and virtually weightless. The ease with which it can be processed, repaired, painted and cleaned makes it a practical material for most purposes.

Some authors have stated that the acrylics are unsatisfactory because they lack flexibility. We feel that any material or combination of materials that may solve a particular problem should be utilized. A patient with a nasal discharge can less noticeably and more efficiently remove and replace a light-weight acrylic prosthesis. The small amount of double-sided tape necessary to retain it, and the thin rigid edges which fit into their planned positions, will simplify removal and replacement for many patients. In instances where flexible material is advantageous, we use combinations of silicone rubber. It is possible to vary the processing, and to control the structure, weight, flexibility, texture and strength to considerable degrees. Although the methods we use have not been published in detail, there is every indication that the silicones possess properties that are superior to those of other prosthetic materials.[3]

Many patients wear their prostheses for days without removing them. One young boy wears his silicone ear prosthesis while playing football and basketball. He reports that he has had no real difficulties with it, but says he would prefer having a slightly softer ear, since such a device would make it easier for him to put on his football helmet.

Experience with the evaluation of candidates for cosmetic facial prostheses, with the types of materials available, and with their manipulation is all-important. However, final acceptance of the prosthesis depends upon successful function and cosmetic result. The placement, configuration, opacity, texture and color of the prosthesis must harmonize with the surrounding tissue. The appliance must appear natural for the individual patient, and must not be detectable under average conditions. If the prosthesis is an obvious substitution, one cannot expect it to improve the morale of the patient.

ACKNOWLEDGMENT

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CLINICAL SUMMARY

The patient's initial admission to the University Hospitals was at nine years of age, when he was sent because of fecal and urinary incontinence. At that time it was determined that he had the intelligence level of a moron, but all studies were found to be otherwise normal. On his next admission, nine years later, he had been sent by the Woodward School for the Feeble-Minded for sterilization, with the approval of the State Eugenics Board. Bilateral vasectomy was performed. The patient had an uneventful postoperative course, and was discharged promptly.

The patient was seen again seven years later for symptoms of epigastric pain, preceded by vomiting, during the previous two months. The pain was not relieved by food, and the patient had lost approximately 15 lbs. in the previous month. He stated that he had been paroled from the Woodward School at age 21 and had worked in a local cafe as a dishwasher. He had been operated upon during that year for right lower quadrant pain, and his appendix had been removed. One year after being paroled, he had been recommitted to Woodward for stealing. Six years later he had again been paroled to the County Board.

Physical examination on this second hospital admission revealed a thin, apprehensive, overactive white male, who had hair of very fine texture, questionable exophthalmos and lid lag. There was a fine tremor of the tongue, and diffuse enlargement of the thyroid gland. There was some overactivity of the heart, but no cardiomegaly was present. The only other positive physical finding was a small pilonidal cyst.

An extensive work-up was carried out. Abnormal findings were a protein-bound iodine of 12.3 mcg. and a basal metabolism rate of +17. A chest roentgenogram and upper and lower gastrointestinal series were interpreted as normal. Intravenous pyelograms showed an ectopic right kidney. The patient was seen by the Thyroid Clinic, and it was the impression of the physicians there that he was suffering from thyrotoxicosis secondary to diffuse nodular goiter. Treatment with radioactive iodine was carried out. The patient responded well to this therapy, with the BMR and PBI returning to normal. He no longer complained of abdominal pain. During his hospital stay, the patient developed an eruption of his scalp which was diagnosed as impetigo. Treatment was followed by a complete remission. When the patient was seen on follow-up, one year later, he was considered euthyroid.

Nine years later, at the age of 35, the patient was seen at the University Hospitals. He had been readmitted to the Woodward State Hospital six years previously and had been there continuously. Approximately two months before this hospital admission, he had noted pain and bleeding per rectum with the passage of stools. Physical examination at this time was considered within normal limits, with the exception of small external hemorrhoids which were thought to be the source of the bleeding. The patient also gave a history of epileptiform seizures for the previous several years, following an auto accident seven years before. He had been taking diphenlyhydantoin sodium (Dilantin), phenobarbital, and primidone (Mysoline). A neurologist who saw him agreed with the therapy.

The patient's last admission was two years later. According to his history, he had suffered severe abdominal pain associated with diarrhea for the three days immediately prior to this admission. A note from Woodward stated that on the day of admission his abdomen had become distended, and his blood pressure had dropped precipitously. On admission he was poorly responsive, in shock, and in considerable distress from abdominal pain. He was almost moribund. The abdomen was distended, and there was marked generalized tenderness. Bowel sounds were absent. No masses or organs were palpable. Rectal examination revealed thrombosed external hemorrhoids. No masses were palpable. A small amount of blood-stained mucus and liquid stool drained from the rectum following the digital examination.

The hemoglobin level was 8 Gm./100 ml., and the white blood cell count was 16,000/cu. mm. The serum amylase was less than 53 units. The blood urea nitrogen was 40 mg. per cent, and the creatinine was 1.4, the CO_2 20.6, the sodium 129, the potassium 3.5, and the chloride 88 mEq./L. A

roentgen of the abdomen revealed dilated loops of small bowel with air-fluid levels. No free air was noted within the peritoneal cavity.

It was the initial impression this patient had a small-bowel obstruction. That same night, after two transfusions, he was operated upon. The entire colon was found to be extremely thick-walled, inflamed, and friable from the tip of the cecum to the sigmoid colon. In the region of the sigmoid colon, approximately eight inches proximal to the peritoneal reflection, a small perforation of the colon was found. The area of perforation was exteriorized in the left lower quadrant. Culture of the peritoneal fluid was taken. An ileostomy was also established and the distal limb of ileum was also brought out to the skin.

The patient did poorly during both the operative and the postoperative period. Considerable trouble was experienced in maintaining the blood pressure. He received 1,000 ml. of blood by transfusion. He was given large doses of steroids intravenously, as well as penicillin and streptomycin. Vasopressors were instituted. Despite these measures, the patient's blood pressure could not be maintained above 70 mm. Hg. He deteriorated rapidly and was pronounced dead approximately four hours following operation. The culture of the peritoneal fluid was later reported as having shown no growth.

CLINICAL DISCUSSION

Dr. S. E. Ziffren, Surgery: Mr. Gaardner will make the presentation for the students.

Mr. T. Gaardner, junior ward clerk: As the possible source of the patient's distress, with the stated findings and the history of institutionalization, one would immediately consider a diagnosis of amebiasis, or salmonella or shigella enteritis. However, the acuteness of onset and the high white blood cell count cast some question upon the latter. Mesenteric artery thrombosis might be the diagnosis. Also, regional enteritis, ulcerative colitis or diverticulitis with or without perforation could give rise to these findings. Other causes of the apparent obstruction could be a neoplasm, polyposis or an inflamed Meckel's diverticulum.

The final diagnosis of the junior students has been influenced by the description of the operative findings. A chronic tuberculous or mycotic granulomatous involvement might fit this gross picture of the colon. However, we feel that the overall picture is one of acute or fulminant ulcerative colitis, and that death was due to a combination of overwhelming sepsis and blood loss. There is a further suspicion that some of the patient's previous episodes of abdominal distress may actually have been mild expressions of a chronic ulcerative colitis, terminating in an acute exacerbation at his final admission. Whereas the most common course of ulcerative colitis is chronicity, acute exacerbations or even an acute initial attack are not so rare as to disqualify this diagnosis. We have no explanation for the negative culture of the peritoneal fluid.

Dr. Ziffren: Thank you. Dr. Mason has consented to discuss the case this morning.

Dr. E. E. Mason, Surgery: Appendicitis can cause diarrhea, peritonitis and ileus, but it is not likely that the patient had appendicitis, for he had had an appendectomy at age 25. He had a good story for hyperthyroidism, which was treated with radioactive iodine. According to a study by Dobyns, those who receive treatment with radioactive iodine and do not receive exogenous thyroid thereafter, have thyroid glands which become quite dysplastic, with variations in cell size and in nuclear structure. I should predict that at autopsy the microscopic examination will show this picture, unless he was given exogenous thyroid. At age 35 he was seen here with some bleeding from the rectum, and a diagnosis of hemorrhoids was made, but these conceivably could have been a part of his final illness. Did he have a barium enema at that time?

Dr. E. F. Van Epps, Radiology: No.

Dr. Mason: He must have been sigmoidoscoped, but apparently that examination revealed nothing, so I guess we'll go along with the diagnosis of bleeding from hemorrhoids, two years prior to his demise. It is apparent from the protocol that he was of low intelligence, and therefore, one might conclude that he had poor personal hygiene—that he didn't wash his hands between defecating and eating, etc.—and so may have inoculated himself with organisms from time to time. He also was in an institution lodging other mentally deficient people with poor hygienic habits, and such institutions provide us a large number of patients with bacillary dysentery and other enteric infections.

This brings us down to the patient's last illness. After three days of severe abdominal pain, diarrhea, and probably blood loss from the bowel, he died. What is the differential diagnosis for the acute dysentery which proceeds for three days and then leads to death? First on my list would be cholera, but it doesn't cause anemia; it causes hemoconcentration, and it is uncommon in Iowa. Typhoid fever usually causes leukopenia; this patient had a white blood cell count of 16,000. If there is a perforation, it usually occurs in one of Peyer's patches in the small bowel. It doesn't involve the whole colon. The operative picture also helped me. It didn't read like a colon in a patient with typhoid. Pseudomembranous enterocolitis or staphylococcal enteritis usually does not cause bleeding or anemia; it does not involve the entire wall of the colon. The colon looks relatively normal from the exterior, in such cases, so I think we can rule that out. Salmonella, maybe. It usually doesn't cause such a fulminating course, but we can't really rule it out. Stool examinations and cultures would have helped. Perhaps we'll get some information from the cultures taken at the time

of autopsy, but that information is out of bounds right now. I gather that no stool cultures were requested prior to the patient's operation. Likewise, I gather there was no sigmoidoscopic examination or barium enema. One would not want a barium enema on someone who was terminal anyway.

Fulminant ulcerative colitis is a good bet. There were 13 patients out of 266 with ulcerative colitis that were reviewed in a recent article by Drs. Hickey, Tidrick, and Layton, in ARCHIVES OF SURGERY. Bleeding is a common part of fulminant ulcerative colitis. Such a patient develops a necrotic colon, extending from the cecum to the sigmoid, as was described in this instance. One never makes the diagnosis of ulcerative colitis, however, until he has ruled out other conditions. And we really don't know what ulcerative colitis is (I'm talking about idiopathic ulcerative colitis). It's a disease that sometimes acts like this patient's disease, but it is a diagnosis one ends up with when everything has been tried and nothing else fits. So without a proctosigmoidoscopic examination to see whether the patient has typical small, punctate ulcers, granular mucosa and easy bleeding, without a stool analysis, and without being able to give him a course of emetine or some anti-amebic drug to rule out amebiasis, I think we must have some reservations about the diagnosis of fulminant ulcerative colitis.

Tuberculous enteritis was mentioned. I happen to know a good deal about that disease, having reviewed all the cases that were treated with streptomycin in the Veterans' Administration Hospitals. I reviewed them in an article in the AMERICAN JOURNAL OF MEDICAL SCIENCES in January, 1949. Almost all of those patients had advanced cavitary tuberculosis of the lung, with positive sputum. The disease usually involves the terminal ileum and cecum, mostly the cecum. It is an unlikely diagnosis in this instance, but before I rule it out, perhaps I had better look at the chest roentgenogram and make sure our patient had no cavities in his lungs.

Dr. Van Epps: As you said, this individual was moribund, and no special procedures were done. This is a supine chest roentgenogram, and there is no evidence of cavitary lesions in either lung field. In fact, there is no evidence of anything other than some linear atelectasis in the bases, which one can find in any individual who is acutely and seriously ill. He had evidence of previous trauma.

In the ribs of the left hemithorax, there were old, healed rib fractures. As far as the abdomen is concerned, there is evidence of considerable dilatation of loops of small bowel, and the right and left decubitis films show fluid levels. There was no free air in the peritoneal cavity. There was no evidence of hepatic, subhepatic, or subdiaphragmatic abscess.

There was, in my opinion, some air in the rectum, and this is an important point in differentiating between ileus and obstruction. If one can demonstrate, or if he feels that he can demonstrate, air within the rectum in addition to the colon, this finding, together with the distended loops of small bowel, makes one think more in terms of an ileus rather than an obstruction. In this instance, I feel that ileus was more likely because I do see some evidence of air in the colon, as well as in the distended loops of small bowel. Transversely, in the upper abdomen, there was air within the transverse colon. There was an absence of the normal haustral markings, but no evidence of any polyps. Our impression would be that this individual had an ileus rather than an obstruction, even though the protocol may have interpreted it as a small-bowel obstruction.

Dr. Mason: The colon still seems to have some haustral markings contraindicating ulcerative colitis.

Dr. Van Epps: Down here, yes. Over on this side, no. These are not normal haustral markings in the transverse portion of the colon. They have been lost. This is irregular, and I feel that the walls were rather thick, too, a feature which was described in the protocol.

Dr. Mason: Those are nice lines of small bowel. That delineation helps us sometimes in trying to find out where the obstruction lies, but of course, we have air in every loop of bowel, so we aren't led to think of mechanical obstruction. As you say, one thinks of ileus.

Dr. Van Epps: The other decubitus film, the right side up, again shows the small-bowel pattern, with some air within the colon.

Dr. Mason: Thus, the x-rays of the chest show no tuberculosis, and the x-rays of the abdomen indicate an ileus. That conclusion would be consistent with the observation of distention, the signs of terminal state and the absence of bowel sounds. It appears from the roentgenograms that most of the distention was of small bowel.

I think we must be consistent and make a tentative diagnosis of either bacillary or amebic dysentery, and stick with that diagnosis until it is ruled out. It keeps one from doing surgery of the type one does for ulcerative colitis and then finding out that the patient really had some infectious process. The Eighth Edition of Cole and Zollinger, which recently appeared, says that subjecting patients to operation during the onset of amebic dysentery results in many fatalities, even though the condition is recognized and emetine therapy is instituted immediately. Craig's text on the ETIOLOGY, DIAGNOSIS AND TREATMENT OF AMEBIASIS, published in 1944, points out there were many fatalities after the 1933 Chicago World's Fair. On that occasion, people were inoculated with large doses of organisms while attending the Fair and staying at a hotel where the drinking water was hooked up to the drainage system in some way. In other words, a big dose of organisms can result in a very fulminant course, leading to death. It is also said by Craig that one cannot differentiate between amebic and bacillary dysentery in these instances, and that in some fulminant cases, the patients have both types of organisms. It is actually a mixed in-

fection. So I shall leave the diagnosis as either amebic or bacillary dysentery.

Now, let's consider why the patient died. The protocol indicates that he was moribund when admitted. Severe dysentery causes a depletion of extracellular fluid. This must be replaced with saline and sodium bicarbonate in proportions of 4 parts to 1 part, or even 3 parts to 1 part. From the serum sodium concentration, I should estimate that the patient probably needed 4 or 5 liters of electrolyte solution, in addition to the blood. The patient probably had severe diarrhea and continued to drink. He therefore had a pure sodium deficit with dilution, possibly with normal total body water, but with the usual shift of fluid with the expansion of the intracellular space and a contraction of the extracellular space. As described in 1935 by Darrow and Yannet, the patient has diarrhea and loses extracellular fluid containing salt; he drinks water, and the water decreases the tonicity of the extracellular fluid. Water then flows freely across the cell membranes. Water enters the cells, the cells become larger and the extracellular fluid space is made smaller. With loss of electrolyte and replacement with water—a nonelectrolyte solution—there is a decrease in concentration or a state of hypotonicity, and this is sometimes called hypotonic dehydration.

I calculated the 5 liters in the following manner: I figured that his serum sodium was 129 mEq./L. —about 10 per cent below normal—and in order to bring it back to normal, one would have had to restore the body-water tonicity, so I would calculate this on the basis of the total body water. I think he needed to have his pure salt deficit restored, and if this had been done, he perhaps would have withstood the disease and the surgery somewhat better. Elkinton and Danowsky restudied this problem about 1946, in a paper in the JOURNAL OF CLINICAL INVESTIGATION, and showed that response does not occur in blood or other fluids in such patients. They need electrolyte solution. Now, I have no doubt that this patient needed blood with a hemoglobin of 8 Gm., but he also needed the electrolyte solution.

In the interpretation of values reported from the laboratory, the first thing one has to do is to establish internal consistency in the data received. Since everything was diluted, I think we can say the laboratory was correct, and we can begin to analyze the CO_2 and the chloride in terms of the dilution of sodium. The chloride should have gone down 10 per cent. It should have been about 96; it was 88 per cent. It was about 8 mEq./L. lower than it should have been. The CO_2 should have been down to about 25 mEq./L. to go along with the dilution of sodium, and it dropped to 20.6, so it was also lower than normal. This means that some unmeasured anions must have accumulated. I would suggest these were probably the beginning anions of azotemic acidosis, plus lactic acid and other organic acids which would increase in amounts with poor perfusion of the tissues and shock. He had a slight elevation of blood urea nitrogen which would suggest that he had some extrarenal azotemia. I predict that his kidneys will show some mild tubular damage, but not to the extent that would suggest renal failure. I suspect that if this man had recovered, with restoration of the extracellular fluids, and if he had responded to treatment and had no other causes for shock, his kidneys probably would have put out urine.

The colon is described in the protocol. It probably didn't look any different at autopsy. Since there wasn't time for development of a generalized peritonitis or an abscess, and since the peritoneal fluid was sterile from a culture obtained at the time of surgery, I doubt that we'll be told of anything unexpected in the peritoneal cavity. If one failed to find Endamoeba histolytica or culture organisms causing bacillary dysentery, then I would agree with the first discussant that in this instance the condition was probably fulminant ulcerative colitis.

Dr. Ziffren: Are there any questions you want to direct to Dr. Mason? Will you proceed then, Dr. Davis?

Dr. J. R. Davis, Pathology: The principal finding at necropsy was amebic ileocolitis, with acute bacterial peritonitis. The entire colon and distal ileum were defunctionalized, with a right upper quad-



Figure 1. Segment of colon. The ulcer margins are shaggy, elevated and undermined. The intervening mucosa is hemorrhagic and edematous.

rant ileostomy and right lower quadrant distal limb stoma and a left lower quadrant colostomy, which exteriorized the sigmoid-colon perforation. The ileum and distal jejunum were dilated, and the wall was pliable and edematous. Severe dilatation also was present in the entire colon. Its wall was thick, indurated, and enveloped in dense adhesions. The colon and ileum exhibited many ulcers that were predominantly discrete and measured as much as several centimeters in diameter. The ulcer bases were yellow, with undermining and elevation of mucosal margins. The intervening mucosa was edematous and hemorrhagic (Figure 1). Ulcers penetrated deeply into the submucosa generally, but in some areas there was extensive superficial mucosal necrosis. The flask-shaped ulcers contained numerous trophozoites of Endamoeba histolytica amid necrotic debris (Figure 2), and in some instances they contained masses of bacteria. The amebae displayed evidence of erythrocyte phagocytosis and pseudopod formation. The organisms were easily identifiable in routine stained preparations, but were made more conspicuous by the periodic acid-Schiff staining reaction in which amebae are strongly positive. Usually, there was a halo around the protozoon, and a minimal cellular inflammatory infiltrate was elicited at the abscess margins. Both of these factors reflect the enzymatic necrosis which characterizes E. histolytica's pathogenesis (Figure 3). Ulcers which had secondary bacterial infection showed a more intense tissue response.

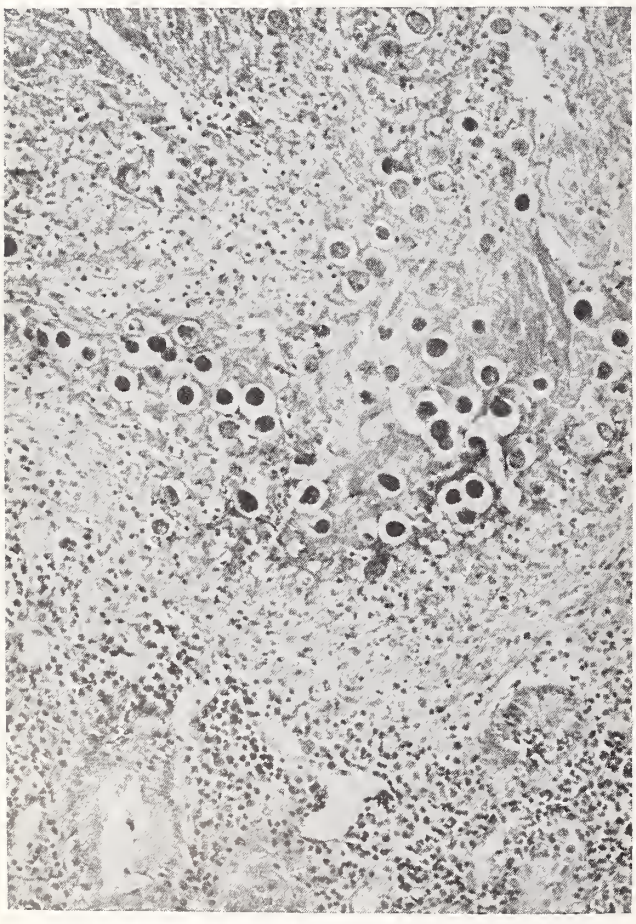


Figure 2. Section of colon with mucosa to the bottom. The margin of the undermining ulcer contains numerous E. histolytica trophozoites. Necrotic debris of the ulcer is to the top. Periodic acid-Schiff stain; magnification 192 x.

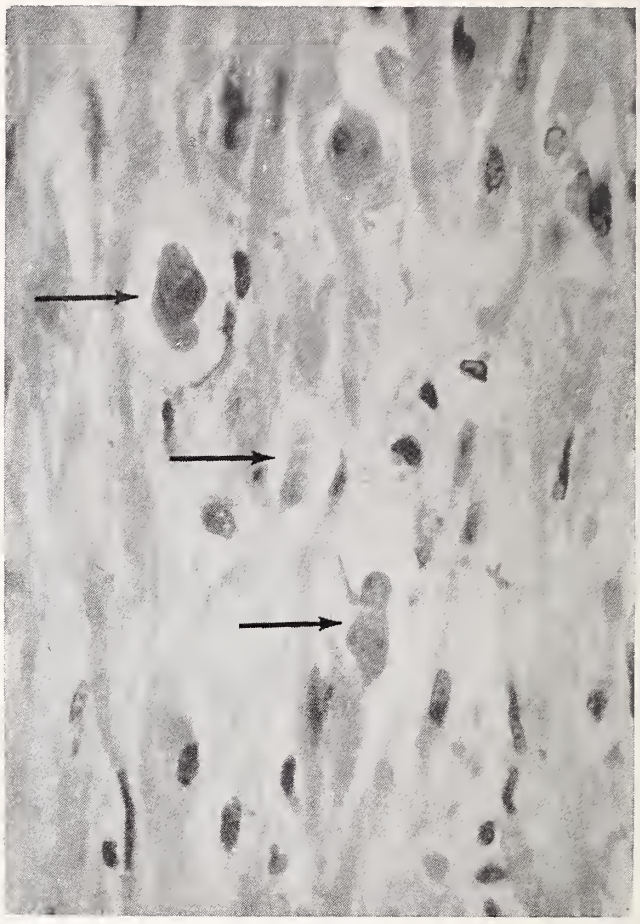


Figure 3. Section of external muscularis of colon wall. Trophozoites (indicated by arrows) exhibit pseudopods and characteristic halo. The inflammatory response is minimal. Hematoxylin-eosin; magnification 768 x.

Trophozoites were present in submucosal lymphatics and venules (Figure 4), as well as in a venous thrombus in the mesocolon. Access to the portal venous circulation provides the avenue for hematogenous dissemination to the liver, but no abscesses were present in either the liver or the regional lymph nodes.

Although there were multiple sites of penetration, no other perforations occurred. The peritoneal space contained an estimated 250 ml. of cloudy, sanguineous fluid, and fibrinopurulent exudate covered portions of the serosa. Culture of the exudate yielded several varieties of colon-flora bacteria, but there was no growth from heart blood. No amebae were found in the peritoneal exudate.

The lungs were heavy, wet and congested, and there was a small volume of hydrothorax. Microscopically, the alveoli were filled with pigment-laden phagocytes. The pigment, by exclusion, is probably carbon, and it elicited no significant inflammatory reaction. There was acute vascular congestion and pulmonary edema.

The liver showed chronic pericholangitis, probably in response to inflammation in the colon and

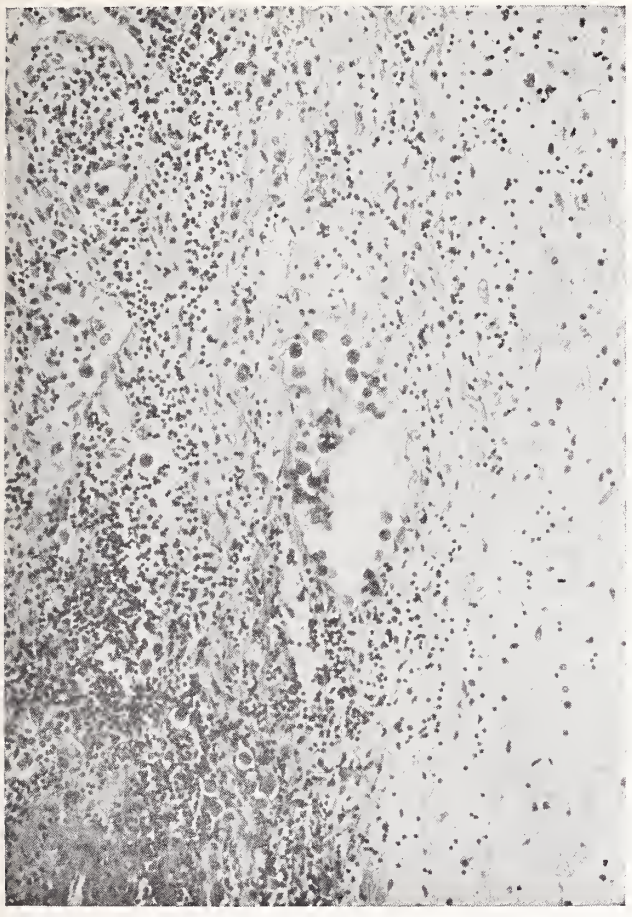


Figure 4. Section of submucosa of ileum with mucosal membrane at the upper margin. Small venule in the center contains trophozoites. Hematoxylin-eosin; magnification 77 x.

ileum. The heart was normal in weight, but was slightly dilated. The right kidney was ectopic, was located at the pelvic brim, and was slightly larger than the normal left kidney. The renal tubular epithelium showed early degenerative changes.

The thyroid was small, atrophic and fibrotic. Sections, as Dr. Mason suggested, did show changes compatible with radioiodine therapy. There was hyalinization of broad fibrotic stromal bands, and the follicles were small but not uniform in size. Much of the epithelium was abnormal with respect to nuclear size, shape and staining intensity. Some arterioles exhibited thickened, sclerotic walls. The persistence of cellular atypism after remote radiotherapy is a point worth remembering.

A small vascular malformation was encountered in the subcortical white matter of the inferior frontal gyrus of the left cerebral hemisphere. There was minimal gliosis around the thin-walled cluster of dilated venules, and no evidence of recent or remote hemorrhage. The adjacent cortex exhibited satellitosis; the oligodendroglia enveloping neurones was a non-specific change consistent with the patient's terminal shock. Lacking a description of the patient's epilepsy, consideration of the angioma as an epileptogenic focus is speculative.

An interesting incidental finding was the presence of reticulo-endothelial hyperplasia, chiefly involving lymph nodes, spleen, bone marrow and liver. As an alternate explanation to amebic infection for the reactive hyperplasia, consideration might be given to the Dilantin therapy which the patient had received for many years. Hydantoin and related drugs have been said to induce an idiosyncratic reaction in a small proportion of patients. An alarming type of reaction has been an intense lymphadenopathy which mimics malignant lymphoma. There may be complete effacement of lymph-node architecture, and extensive proliferation of abnormal reticulum cells, generally accompanied by eosinophil infiltration and sometimes associated with focal areas of necrosis. Our patient had preserved his lymph-node architecture and had no necrosis, but there were clusters of proliferative and atypical reticulum cells, with a few eosinophils.

The cause of death was acute bacterial peritonitis, with shock, following sigmoid colon perforation due to amebic ileocolitis.

Dr. J. M. Layton, Pathology: In the face of the perforation, how do you account for the lack of intra-abdominal air in the x-ray films?

Dr. Ziffren: Dr. Van Epps, do you want to answer that?

Dr. Van Epps: A localized perforation could have been obscured by the distention. There was no free air demonstrable on these films.

Dr. Ziffren: Dr. Davis, do you have any answer?

Dr. Davis: No, the perforation was completely exteriorized at the time of autopsy.

Dr. Ziffren: Dr. Good?

Dr. J. D. Good, Surgery: The perforation could well have been sealed off at the time of operation, and I think it needn't have been open for very long to permit bacterial soiling of the peritoneal cavity.

Dr. Ziffren: He was talking about air.

Dr. Good: I know, but I don't think it needs to be open long enough so that air is demonstrable on an x-ray film.

Dr. Layton: With as much gas under pressure as there was in the colon, I believe some would have escaped.

Dr. Ziffren: I don't suppose any surgeon has the answer for that, Dr. Layton.

Dr. Layton: Was it difficult to free the colon during the operation?

Dr. Good: Yes, very difficult.

Dr. Layton: Could the perforation have occurred at the operation?

Dr. Good: I don't believe so, for there was some mucoid material outside of the colon, and we were very careful.

Dr. Layton: Would Dr. Van Epps care to say anything about the pathogenesis of the rib fractures and how old they were?

Dr. Van Epps: Well, they were probably several years old. They were united by solid bony union, and probably were the consequence of trauma that had occurred several years prior to this examination.

Dr. Henry E. Hamilton, Internal Medicine: Did the surgeons look at multiple sections of the liver

for any evidence of trophozoites in the liver tissue, or was it difficult to look for them?

Dr. Davis: We did examine multiple sections of liver, but no trophozoites were found.

Dr. Mason raised the question of dating the onset of amebic infection. We can't do this precisely. It was consistent with two months, two years or perhaps longer. It may well have represented chronic amebiasis, and the patient may have been an asymptomatic carrier for an extended period.

Dr. Ziffren: Dr. Hamilton, would you care to make any comments about amebiasis?

Dr. Hamilton: This is a beautifully worked-up case, and we can learn a number of important lessons through a study of this protocol. The few moments left in this hour preclude a discussion of the complex symptoms presented in patients with amebiasis. One message I would like to leave, however, is that amebiasis is basically a chronic granulomatous disorder, just as it was here. Most human beings handle the infection well, and voice only minor complaints which are usually referable to the gastrointestinal tract. Why some individuals become seriously ill with the sequelae observed in this case, no one really knows. It's trite to say it, but it's nevertheless true that one has to think of this illness in order to make the diagnosis. The secondary effects may be so overwhelming that the clinician may not even think of an underlying amebic infection.

Here at the University Hospitals, we have a recurring syndrome with which we should all be familiar. It often is found in the patient referred from a mental institution who is chronically ill, perhaps is moribund, has fever, weight loss, anemia and leukocytosis, and has not responded to antibiotic therapy or steroids. Such an individual has amebiasis until proved otherwise. Recognition of this disease in the severely ill and often nearly dead patient is important, for the use of emetine hydrochloride is the key to saving the patient's life. As was stated earlier, these people are also ill with electrolyte and water imbalance and anemia. Usually they are malnourished and have the added deleterious effects of fever, yet they do not respond well to any of the supportive measures used to correct these defects. The parasite is responsible for the final shock-like picture, which may be due in part to toxins elaborated by the ameba or emanating from the products of tissue breakdown. The reversal of this profoundly disturbed physiologic state occurs within hours after an injection of emetine hydrochloride. This response is a remarkable phenomenon in its own right.

In a situation such as the one presented today, one should certainly get down to a tentative diagnosis of bacillary dysentery or amebiasis, just as did Dr. Mason. Each of these diseases can be treated, but each may also be difficult to prove in the laboratory. Thus, after the appropriate specimens of stool, blood, and urine have been obtained for parasite and bacteriologic studies, treatment is in order.

A final message regarding the treatment of amebiasis in patients who are acutely or seriously ill. Emetine hydrochloride is the drug of choice. It has been recognized in recent years that the death rate has been exceedingly high in seriously ill patients treated only with the drugs used in the more chronically ill patients—i.e., Diodoquin, Chloroquine and the tetracyclines and arsenicals, to the exclusion of emetine. Emetine is a safe drug if used in the adult in 60 mg. doses daily for three to five days.

In conclusion, I hope that when this syndrome unexpectedly pops up in the clinic or on the ward, we shall henceforth recognize it as an old adversary for which there is an antidote.

ANATOMIC DIAGNOSES

Amebiasis; ileocolitis with perforation of sigmoid colon
Acute peritonitis (colon-flora bacteria)
Postoperative: exteriorization of sigmoid colon perforation and separated double-barrel ileostomy
Emaciation
Pericholangitis
Pulmonary edema and congestion
Hydrothorax, bilateral, mild
Anthracosis
Epilepsy and mental retardation (clinical)
Vascular malformation, subcortical white matter of left cerebral hemisphere
Diffuse reticuloendothelial hyperplasia
Thyroid atrophy; radiation reaction
Ectopic right kidney

STUDENTS' DIAGNOSES

Acute ulcerative colitis
Sepsis

DR. MASON'S DIAGNOSES

Acute amebic dysentery
or
Acute bacillary dysentery
Possible fulminant ulcerative colitis
Salt deficit with dehydration

F.D.A. Seeks to Regulate Prostheses

The U. S. Food and Drug Administration asked Congress on March 9 for power to police the manufacture of artificial eyes, bone pins and similar prosthetic devices used by surgeons. It prepared a horror exhibit for the special Senate subcommittee on frauds and the elderly, including 23 plastic eyes that had been removed from patients and eight types of hip pins that one surgeon had found causing trouble during the past two years. The eyes had caused infections because of material defects or faulty design, and the pins either had rusted or had caused infections.

George P. Larrick, M.D., head of the agency said the F.D.A. now has no power to pass upon the quality of such products, and many surgeons may not be able to tell whether a particular prosthetic device has been made from the proper materials.



PREVENTION OF EMBOLIC PHENOMENA

A recent article by Richtmeyer,* a Washington, D. C., surgeon, points out that although early ambulation has reduced the incidence of postoperative thrombophlebitis and pulmonary embolism, these problems persist. He describes some simple measures which he believes have further reduced the incidence of complications in his patients. During the past 15 years, in some 5,000 consecutive surgical patients, he has used a rigid prophylactic regimen of postural management similar to that employed in the treatment of thrombophlebitis after it has occurred.

It is well recognized that any condition which contributes to venous stasis in the lower extremities predisposes to intravascular thrombosis in those parts. The factors in the postoperative state which have been suspected of causing this condition are abdominal distention, tight abdominal binders, pressure on the popliteal areas by the bed or pillows, and tight bandaging of the thighs. There is an increased hazard for patients with cardiac disease who have dependent venous stasis, who are confined to bed for long periods of time, and who sit for many hours propped up in bed. Patients with preexisting varicose veins or previous thrombophlebitis are particularly susceptible. Thrombophlebitis is a common complication in obese patients, in patients with cancer or systemic infection, and in patients with certain blood disorders.

Postoperatively, it is asserted, there is a period of about 10 days during which there is an increased clotting tendency of the blood. Though not fully understood, this is thought to be the result of the patient's reaction to stress. The combination of venous stasis and increased coagulability of the blood increases the chance of spontaneous thrombosis in the leg veins and in the pelvic veins.

The program of prophylaxis which Richtmeyer has carried out consists of the following measures:

1. The bed is kept absolutely flat at all times except when the patient is eating or using the bed pan.

2. Early ambulation is started within 24 hours after surgery, when the patient is physically able to be ambulatory.

3. For a period of about 10 days, patients are urged *not* to sit in chairs in their rooms, or are permitted to do so for no longer than 10 minutes at a time.

4. A nurse supervises deep-breathing and leg exercises several times a day.

5. For the last two years, major-surgical patients have worn elastic stockings up to the knee during the postoperative period.

6. In patients with histories of deep phlebitis, anticoagulant therapy is given or aspirin is administered in doses up to 40 grains per day.

According to the author it is not always easy to convince patients that the head of the bed should not be elevated and that they should not sit watching television or reading for long periods postoperatively. However, when the reasons for the restrictions have been carefully explained, most of them accept the inconvenience philosophically.

During the 15-year period during which the regime has been carried out, only two of the patients who followed the program conscientiously developed pulmonary embolism or complications of phlebitis in a lower extremity.

It would appear that greater attention to the positioning of the patient in the postoperative period can reduce the incidence of thrombophlebitis and of pulmonary embolism.

* Richtmeyer, D. C.: Role of posture in prevention of thromboembolism. MED. ANN. DIST. COLUMBIA, 33:67-69, (Feb.) 1964.

SAFETY GLASSES FOR SCHOOLS AND WORKSHOPS

The National Society for the Prevention of Blindness urges the use of safety lenses, not only in industry, but in a wide range of occupations and avocations that hadn't earlier been thought especially hazardous to the eyes. At its 1964 meeting in April, the IMS House of Delegates agreed in recommending such protection for school children enrolled in shop classes and in other activities where a risk to the eyes is great.

According to the Society for the Prevention of Blindness, accidents involving the eyes occur in this country at a rate exceeding 1,000 per day. It is estimated that each year more than 145,000 children and 300,000 adults incur a risk of loss of sight from shattered glasses.

To individuals for whom any hazard exists, safety lenses are recommended. Lenses without optical correction should be worn by those who possess normal vision, and corrective lenses should be worn by those who possess visual defects.

Safety glasses are made from special heat-treated glass which does not shatter when broken, and they are hard enough so that they can be broken only with difficulty. Safety spectacle frames are designed to retain the safety lenses even under heavy impact, and in addition they are flame-resistant. They are slightly heavier than ordinary spectacles, and they are also somewhat more expensive. One oculist has stated that it costs an individual $3 more to have an eyeglass prescription filled in safety glass than in ordinary optical glass. The

Editorials continued...

fact that safety glasses can drop without breaking fully justifies the additional cost.

Vision is a precious gift. Laymen and physicians should take every precaution to preserve it. The impact of a stone thrown by a power mower, a blow from an errant golf ball, a chip from an emery wheel or any of a multitude of other mischances can result in irreparable damage to an eye. We live in an age of action, mechanization and automation. Every possible means should be used to preserve sight, and safety glasses can play a very important role in the accomplishment of that goal.

THERAPY FOR ACUTE BARBITURATE INTOXICATION

Two Danish physicians* have reported their experience with an ingenious method of treating severe acute barbiturate intoxication. Their plan of treatment consists of alkalinization of the urine by a sodium lactate solution, and of osmotic diuresis by urea, both solutions administered intravenously.

They have cautioned that only severe cases of intoxication by long-acting or slowly-eliminated barbiturates should be treated in this manner. In itself, the treatment is not life-saving, but it reduces the duration of coma, and consequently prevents some of the complications that develop during long periods of unconsciousness.

The diuretic plan of treatment is not started until adequate ventilation has been achieved and circulatory stability has been assured. The fluid balance is followed hour by hour, and careful records of fluid intake and urinary output are maintained. A cumulative balance is calculated every eight hours. Routine blood samples are taken before treatment is initiated, and daily thereafter. Serum creatinine, blood urea, serum bicarbonate, serum protein, sodium and potassium determinations are made. If inadequate ventilation is suspected, determinations of arterial pH, CO_2 content, and O_2 saturation should be done.

The diuretic treatment is contraindicated under the following conditions:

1. The absence of deep coma, primarily in patients habituated to large doses
2. Pronounced hypotension despite adequate treatment of shock by means of blood, blood substitutes and pressor amines
3. Manifest pulmonary edema
4. A definitely reduced renal function, with a serum creatinine concentration above 2.5 mg./100 ml.

The preparations used in the Danish plan of treatment are:

1. A urea solution, the osmotic agent, consisting of a 50 per cent solution of urea in physiologic saline
2. An electrolyte solution containing sodium lactate, sodium chloride, potassium chloride and glucose. This solution is employed to alkalinize the urine and to prevent electrolyte depletion from the diuresis produced by the urea. Barbiturates are weak organic acids which are excreted by glomerular filtration, but tubular resorption can occur if the urine is scanty and acid.

The initial period of treatment consists of the administration of 300 ml. of the electrolyte solution and 80 ml. of the urea solution every hour for four hours. Diuresis should exceed 350 ml./hr. A lesser amount, though it is seldom less, suggests either dehydration or hyperventilation. One may continue treatment cautiously, by keeping the fluid intake equal to the urinary output in the preceding hour and by limiting the urea to 10-15 Gm. per hour. A complete failure of diuresis indicates acute renal failure, and the treatment should then be stopped.

After the initial period of diuresis, a steady infusion of 600 ml. of the electrolyte solution and 30 ml. of the urea solution is given each hour. After about four hours, the amount of the urea solution can usually be reduced to 20 ml. or even to 10 ml. per hour, without fluid retention. The blood urea should never be permitted to exceed 400 mg./100 ml. Fluid retention must not exceed one liter in 24 hours. Calcium is administered intravenously, 10 ml. of a 10 per cent solution, every eight hours.

When the patient has regained consciousness, the infusion of urea is stopped, but the administration of the electrolyte solution is continued for another eight hours. Patients who have had an hourly diuresis of 600 ml. during treatment are given 400 ml. hourly for four hours, and then 200 ml. hourly for the next four hours.

In all, 92 patients with barbiturate intoxication were admitted during the period from July, 1960, to October, 1962, and among these there were seven deaths. Fifty-seven of the 92 patients were treated by the method of osmotic diuresis, and three of that group died. One patient succumbed as a result of shock and pulmonary edema; two patients died from cerebral hemorrhage. Twenty-nine of the 92 patients were not in deep coma on admission and were not given the diuretic treatment. Four patients had a persisting hypotension, they were not given diuretic therapy, and all of them died. Two patients had renal failure, and diuretic therapy was not attempted. One recovered spontaneously, and the other recovered after receiving hemodialysis.

Fluid retention was the most common complication of therapy. In the event that it exceeds one

* Myshetzky, A., and Lassen, N. A.: Osmotic diuresis and alkalinization of urine in treatment of severe acute barbiturate intoxication. DANISH MED. BULL., 10:104-108, (June) 1963.

liter, the authors recommend that the fluid input be reduced or that the urea input be increased. Electrolyte imbalance was an uncommon occurrence. Hypernatremia can occur, and if it is detected, glucose solution is substituted for the electrolyte infusion. Mild hypokalemia may develop, and is treated by the administration of small amounts of KCl.

According to the authors, the average duration of treatment was 42 hours. The longest period of treatment in the group of 57 patients was 133 hours. An average diuresis of 12.1 liters of alkaline urine was produced in 24 hours. Reduction in the duration of coma was two to four times as great as that achieved in 82 controls who received only the conventional treatment. The 24-hour elimination of barbiturate differed consistently with the different drugs. The highest elimination rate (72 per cent per 24 hours) was found with diallyl barbituric acid, and the lowest (36 per cent) was found with phenylethyl barbituric acid (Luminal).

The authors state that hemodialysis can effectively increase the elimination of barbiturate by virtue of a clearance of 30 to 40 ml. per minute, as opposed to a clearance of an average of 12 ml. per minute by diuretic therapy, as demonstrated in the series of 57 patients. If hemodialysis is carried out for eight hours daily, the two methods of treatment are of about equal efficiency. The plan of treatment by diuresis, however, has the advantage that it is much simpler and much less expensive than hemodialysis.

For comparison, 82 patients with barbiturate intoxication were cared for from January 1, 1957, through July, 1959. Fourteen of the 82 patients died. Tracheotomy was required in 11 per cent, as compared with 5 per cent in those receiving diuresis therapy. The incidence of pneumonia and atelectasis in the two groups was 29 per cent in the control group and 26 per cent in the treated group; vasopressors were necessary in 25 per cent and 19 per cent, respectively.

From their experience, the Danish physicians concluded:

1. The use of urea-induced diuresis and alkalinization of the urine in the treatment of barbiturate poisoning resulted in a marked increase in barbiturate elimination.

2. Only patients intoxicated with barbiturate compounds of slow spontaneous elimination were treated. In the duration of coma, a reduction of about one-third was obtained.

3. The diuretic treatment was found to reduce the mortality and the incidence of tracheotomy to 50 per cent of those in the untreated group.

4. Inasmuch as the treatment by diuresis is relatively simple and the complications are few, the treatment is a valuable adjunct to the fundamental supportive therapy in severe barbiturate poisoning.

CAVEAT MEDICUS

An editorial in PHILADELPHIA MEDICINE* points out that there are four common complaints which come to the attention of the Professional Grievance Committee. The majority of these are results of the physician's errors of omission, and only rare ones are due to his errors of commission. Here are the four categories:

1. *Delay in seeing the patient.* Depending upon the nature of his illness, the patient should be seen as promptly as possible, and if the physician is delayed, the patient's family should be informed of his approximate time of arrival.

It is frustrating to anyone and inimical to the interests of the physician if the patient has to wait weeks or months for an appointment. It is both disconcerting and maddening for the patient to have an appointment at a given hour and find it necessary to wait for an interminable period in a crowded office.

2. *Failure to give sympathetic and understanding counsel in addition to prescribing medical treatment.* Too many patients leave the physician's office with the feeling of having been through an assembly line. The physician should make the patient feel that he is truly interested in him and his problems, and though he may find it difficult, he should strive to appear unhurried.

It is also a common occurrence for the hospital patient to complain that his doctor was in to see him but was out of the room again before he could ask him a single question.

3. *Giving an inadequate explanation of the nature of the illness.* The patient resents the doctor's failure to explain the nature of his illness in understandable terms, and to give him an honest appraisal of his condition. The physician is often remiss in that he fails to explain the need for and the significance of the results of numerous tests, or to explain why a consultant is necessary. Too often, the patient feels that the doctor is withholding information and has not given him an honest opinion about his condition. Time devoted to a discussion of problems with the patient and with his family will reassure the patient and disarm critical relatives.

4. *Failure of the doctor to discuss the probable costs of an illness or operation.* As accurate a financial picture as possible should be projected in order to prevent later unpleasantness. When a family cannot pay the costs of an extended illness, they should be urged to use community or state facilities rather than incur a catastrophic indebtedness.

It is obvious that most of the complaints concerning professional care are due to the failure of the physician to treat the patient as well as the disease. The art of medicine encompasses many

* Bumgardner, H. D.: Four causes of trouble (Editorial). PHILADELPHIA MED., **60**:239, (Feb. 28) 1964.

Editorials continued...

qualities, but courtesy and consideration are probably the two which are most appreciated by the ill patient.

BAD NEWS FROM KANSAS

A recent brief editorial in the GREATER KANSAS CITY MEDICAL BULLETIN by Dr. Mark M. Marks has rather frightening implications.* According to Dr. Marks, a report of a poll of high school seniors in the State of Kansas has indicated that one-half of them believe that the federal government should be in complete control of all utilities, businesses, schools, farms and factories. This near majority can be said to believe that socialism is the trend of the future and will assure them of security.

That such a concept should be held by a large group of high school students in the conservative State of Kansas is utterly inconceivable, just as the expression of such a philosophy by a comparable group in Iowa is unthinkable. If the poll alluded to by Dr. Marks is representative of the thinking of American youth, the future of American democracy is grim indeed. If security constitutes the only real goal of American youth, and if the federal goverment is expected to provide that security, the character which made America great has eroded much farther that we have ever dreamed possible. What has happened to the pioneer spirit, the individualism, the self-determination, the compulsive drive, the courage, the pride which characterized the early settlers of the prairie?

How has youth become tarred with the stick of federal paternalism? Probably the home, the school, the community, the politicians are all in some measure responsible, for the philosophy of too many of these seems to be "The world owes me a living."

Political promises in the form of "Medicare," "War on Poverty," "Elimination of Dropouts," "Lower Taxes Despite Increased Budgets," and "All Things to All People" assure us of an effortless Utopia. It is not surprising, then, that individual initiative, individual daring and bold adventure are becoming passé.

If the American way of Life is to be preserved and if federal paternalism is to be kept in check, the voters of America must be discriminating in the selection of their representatives in Congress. It would also appear that a basic course in economics should be conducted in our high schools. Someone must convince the youth of the land that federal handouts come from the taxpayer's pocket and are not created by political legerdemain.

* Marks, M. M.: Moral rearmament, junior phase (Editorial). GREATER KANSAS CITY MED. BULL., 58:503, (Feb. 8) 1964.

ACUTE ANAPHYLACTIC REACTIONS TO ACTH

A report of acute anaphylactic reactions which occurred in two children who were given injections of ACTH for the treatment of asthma has recently been published.* On previous occasions, both patients had been given ACTH by injection, with no ill effects. The authors emphasize that the drug should not be used in the treatment of asthma, and if steroid therapy is to be employed, it should be initiated with cortisone or one of the cortisone derivatives.

Skin-sensitivity studies were done on the two patients with various extracts of beef, pork, whale, human and synthetic ACTH. Similar tests were made with extracts of the anterior and posterior pituitary. Both of the children showed well-defined positive reactions to all of the extracts of ACTH, regardless of source, and also to some of the extracts of the pituitary.

The authors concluded that extracts of ACTH are highly potent antigenic substances, and that a patient allergic to one type is very likely to be allergic to ACTH derived from any other animal source. Inasmuch as severe reactions may occur without any warning, the administration of ACTH should always be considered hazardous. It is questionable whether ACTH has any advantages over the cortisone derivatives for the treatment of asthma or other allergic disorders.

It is disconcerting to the physician to find that therapeutic agents which he has regarded as safe and effective have been found to be hazardous. There is no place for therapeutic nihilism in modern medicine, but a high degree of susceptibility to iatrogenic disease from each and every drug must be constantly kept in mind.

* Rosenblum, A. H., and Rosenblum, P.: Anaphylactic reactions to adrenocorticotropic hormone in children. J. PEDIATRICS, 64:387-395, (Mar.) 1964.

DO-MD's in New York State

More than 15 doctors of osteopathy in New York State have become "DO-MD's" in recent months through a ruling by New York's Department of Education, the state's professional licensing agency. They were so registered after the Department decided that MD degrees which they had received through the California College of Medicine, Los Angeles, were also valid in New York State.

The New York medical licensing examination is the same for MD's and DO's, and thus their New York licenses gave the DO's identical practice rights with MD's. On that basis, the Department authorized them to add "M.D." to their signatures.

The Medical Society of the State of New York is asking the State Board of Regents to "review and reverse" the Department's decision on the grounds that the osteopaths have never attended colleges of medicine and that the Department has no right to issue academic degrees.



Doctors Should Make a Special Effort to

Help Patients Keep Their Immunizations Up-to-Date

Each Iowa physician is asked to employ special measures, this year, to make sure that every man, woman and child whose health is in his care has received the immunizations that he thinks that individual needs. Doctors of medicine throughout the state have contributed their time and skills to the community-wide oral-vaccine clinics designed to protect their fellow citizens against poliomyelitis, and through their local medical societies in most counties, they conduct pre-school examinations and immunizations annually. However, it is far preferable for doctors to give vaccinations and inoculations on an individual basis, and since a great many people have allowed their immunities to lapse, it is incumbent upon doctors to show convincingly that individual prophylaxis can be all-encompassing.

Within a few more years, it is reasonable to expect that vaccines will be developed to protect the public, or especially vulnerable groups of people, against a number of additional diseases, but each doctor should start his personal immunization campaign now. When his patients, and in particular the mothers and fathers of small children, have been alerted to their need for "shots" and periodic "boosters," they will be certain to come in of their own accord for the new types of protection.

SMALLPOX AND TETANUS

Currently, the American Medical Association, the U. S. Public Health Service and the Armed Services are especially concerned about the generally low levels of immunity, among Americans, to smallpox and tetanus. The latest figures show that smallpox cases have recently increased an average of 13 per cent in most areas of the world. More significantly, the disease has reappeared in several countries, such as Sweden, which have long been free of the infection. The United States hasn't had a case of smallpox since 1949, but all of us recall the scare, last year, when a Canadian youngster with smallpox arrived in New York City by air, from South America, and the furor at about the same time when some Pakistanis reintroduced the disease into England.

In these days of high-speed and high-volume international travel, Iowa's situation in the center of the United States no longer insulates its citizens against foreign plagues. Every day, about 90,000 international travelers are cleared by the U.S.P.H.S. quarantine officials at ports of entry throughout the United States, and of that number, about 1,000 per day arrive from countries where smallpox is present.

The general susceptibility of Americans to tetanus is no less serious. No physician needs be re-

minded that Clostridium tetani produces a horrible, agonizing disease that is fatal in 60 per cent of the individuals who have absolutely no protection against it, and no doctor is unaware that tetanus toxoid, administered in advance, is far preferable to the tetanus antitoxin which he gives to accident victims who haven't kept their immunity current. But doctors are kept so busy that some of them, perhaps, may need to be reminded of the minor cuts and scratches—just as dangerous in permitting entry to tetanus germs—which their patients undertake to disinfect and bandage at home. A mere prick from a rose thorn is sufficient, in some instances, and since the germs are propagated and spread through the alimentary tracts of farm animals, they are especially prevalent in Iowa.

DANGER FROM OTHER DISEASES

More often than not, no cases of diphtheria are reported in the monthly morbidity reports of the Iowa State Department of Health, but there were a few in and near Sioux City during the past year. Diphtheria, then, is another disease against which doctors should make sure that their patients are protected. In addition, there are contagions to which only certain people are susceptible. Gamma globulin may be given to those who have been or are likely to be exposed to hepatitis; influenza vaccine to pregnant women and certain chronically-ill patients; typhoid inoculations to flood victims; penicillin to rheumatic-fever patients; etc.

During World War II, most adult American males and a great many adult females received "shots" to guard them against several dread illnesses, and from about that time or earlier, infants and pre-school children have been inoculated regularly. But World War II occurred about 25 years ago, and it is estimated that no more than one quarter of our population is adequately protected as of this moment.

Incidentally, World War II offered the best possible proof of the efficacy of tetanus toxoid. Over 600,000 Americans were wounded in action, yet only one developed tetanus. The situation was far different in the Japanese and German armies, which continued to rely on the antitoxin. Thousands of Japanese and German soldiers died because they could not be given antitoxin in time.

EVERYONE SHOULD HAVE HIS OR HER PERSONAL PHYSICIAN

The Rural Health Committee of the Iowa Medical Society, through its liaison with Farm Bureau Federation and Agricultural Extension Division personnel, has been striving to persuade Iowans to ask their doctors for help in bringing their immunizations up to date. It now asks physicians to offer such assistance to each of their patients. The IMS and the AMA have numerous attractive materials that doctors can secure free or at low cost for this purpose—cards for display in their waiting rooms, and leaflets that they can enclose with their statements or leave for patients to carry away with them.

Some of the best of these materials are the Health Information Cards. The IMS has a supply of cards for individuals, on which drug sensitivities, allergies, recent or chronic illnesses, etc. can be listed, in addition to the dates and types of the bearer's immunizations. The AMA distributes somewhat larger ones that provide spaces for such information on all members of a family. When the physician has written pertinent medical information on such a card, it constitutes documentary evidence of the physician-patient relationship that has been established, and in particular, of the concern that the doctor has and expects to maintain regarding the good health of his patient.

Nearly everyone in this country visits a doctor of medicine whenever a pregnancy or an illness occurs, but far too few people avail themselves of the personalized preventive medicine and regular health examinations that they might have if each of them regularly consulted and relied upon his or her personal physician. A universality of patient-to-physician relationships—or preferably of family-to-physician relationships—would be far better for all Americans than any socialistic arrangement, and would be much better than the present scheme, if it can be called one, under which too many people wait to queue-up at assembly-line immunization clinics, and to consult the "Yellow Pages" when a medical emergency befalls them.

They can't be expected to change their habit patterns all by themselves, however. Physicians must help to nudge them—especially those whom they see *least* often—to act in their own best interests and in advance of possible catastrophe.

President's Page



An optimum physician-patient relationship encompasses reciprocal obligations. These are predicated upon dedication, privileged communication, personal responsibility and mutual confidence.

When private insurance bypasses the patient and makes a direct vendor payment, the physician-patient relationship is deprived of a fundamental moral component—"individual responsibility."

All participants find the system comfortable, reliable and convenient. The patient, however, once relieved of his most exacting obligation and unaware of the consequences, assents to the conversion of the private method to a public mechanism which has no regard for any of the original modalities.

Otis D Wolfe

President

Civil Defense News

The following is a progress report requested by the chairman of the Iowa Civil Defense Administration covering the period from July 1, 1961, to date. Most of the stepped-up progress shown in this report has been made subsequent to February 16, 1962.

1. Confidence and the spirit of team work have been generated and cemented with federal, state, and local government officials, private enterprise, service and civic organizations through informal visits, private and public discussion, and immediate and positive action upon all requests for assistance.

2. The Iowa State Survival Basic Plan, to include communications service and fire annexes thereto, have been updated to strengthen organizational structure, command control, coordination of Civil Defense operations, mobilization of resources, and outlines of specific actions to be taken throughout the state in case of an emergency.

A suggested joint county/municipal operational basic plan together with suggested county and city resolutions have been prepared and furnished county and city officials throughout the state to assist them in establishing a joint administration for the direction, administration and coordination of Civil Defense matters throughout the county in a joint effort.

3. The number of political subdivisions that have prepared an approved Civil Defense Basic Plan for action in case of an emergency has increased 3100 per cent, from two counties to 63 counties.

4. The number of political subdivisions eligible to participate in the Federal Personnel and Administrative Expenses Program (matching funds) for the payment of salaries, travel, communications, supplies and material, equipment, etc., for the administration and establishment of adequate Civil Defense programs and activities have increased approximately 600 per cent from eight counties to 48 counties. The number of paid civil defense employees of these political subdivisions have increased from 18 to 67 or approximately 370 per cent. The total yearly personnel and administrative expenditures have increased from approximately $72,000.00 to $266,000.00, an increase of approximately 370 per cent. Yearly expenditures have also increased for material and equipment from $44,000.00 to $768,000.00, an increase of approximately 1700 per cent. Fifty per cent of these expenditures are paid by the federal government.

5. Through the cooperative efforts of the Corps of Engineers, Rock Island, Illinois, 1,846 buildings and facilities have been located throughout the state for use as shelter areas with a protection factor ranging from 40 to 1,000. These shelter areas have a total capacity for 1,134,000. Licenses to use 1,142 of these buildings and facilities have been obtained from the owners thereof for use as shelter of the people in case of an emergency. These buildings and facilities that have been licensed as shelters will provide shelter for 657,000 persons. Of the licensed shelters, 789 have been stocked with approximately two weeks' supply of food, water, health and sanitation supplies, radiologic-detection instruments, etc. These shelters that have been stocked have a capacity for protection and sustaining 364,000 persons. To date 1,333 of the total buildings and facilities (1,846) have been marked with the official shelter area emblem to identify them to the public as shelter areas for use in case of a Civil Defense emergency. These shelters have a total capacity for 779,000 people. Of the buildings and facilities licensed and stocked with supplies, 785 have been provided with shelter radiologic-monitoring kits. Each shelter that has been provided with a shelter radiologic-monitoring kit has a minimum of two trained monitors.

6. An additional 711 radiological monitoring stations have been established and manned by 1,990 trained monitors throughout the state. Thus the over-all total of radiologic-monitoring stations is 1,496, with a total of 3,560 trained monitors.

7. Through the cooperative efforts of the Iowa Civil Defense Administration and the State Department of Health, approximately 228 courses have been conducted in medical self-help, and 4,136 persons have completed this course. It is our goal to repeat this course until at least one adult member of every family throughout the state has completed the course. Primarily, the course is designed to give people the maximum training and knowledge as to what to do when there is no professional medical help available.

8. Through the cooperative efforts of the Iowa Civil Defense Administration and the State Department of Public Instruction, 723 certified teachers have been trained and approved to conduct and instruct in matters relating to the Civil Defense Adult Education Program. To date, 447 classes have been completed throughout the state, with an enrollment of 13,196 adults. At the present time, 44 classes are being conducted with an enrollment of approximately 1,318 adults in attendance. The purpose of this program is to inform

public officials and the people about the need for Civil Defense, the effects thereof, and what to do to protect themselves in case of an emergency.

9. Through the cooperative efforts of the Iowa Civil Defense Administration and the Engineering Extension Service, Iowa State University, 23 conferences have been held with an attendance of 1,399 state, county, and city government officials. The purpose of these conferences has been to instruct government officials in the need for Civil Defense at all levels of government, regarding their responsibilities in connection therewith, the effects that a nuclear war would have upon our nation, and what should be done for the protection of life and property and the management of resources in case of a Civil Defense emergency.

Three courses for shelter management instructors with an enrollment of 28 adults have been completed, and two adult courses are in progress at the present time.

One course for radiologic-monitoring instructors with an enrollment of seven adults has been completed, and one additional course is in progress at this time.

During fiscal year 1965 it is planned that the following conferences and courses will be conducted by the Engineering Extension Service, Iowa State University, in cooperation with the Iowa Civil Defense Administration:

a. Thirty conferences for government officials (state and local) concerning matters relating to the need for Civil Defense, the effects thereof, and the responsibility of government officials in the establishment of an effective Civil Defense organizational plan and program.

b. Six courses to train shelter-management instructors.

c. Six courses to train radiologic-monitoring instructors.

d. Twenty courses on shelter management.

10. Plans, policies, and procedures have long been in effect for the State of Iowa and local governments thereof to obtain federal financial assistance (Public Law 875—81st Congress) to supplement the efforts and available resources of the state and local governments in carrying out their responsibilities to alleviate suffering and damage resulting from major disasters and to repair essential public facilities in major disasters. "Major disaster" means any flood, drought, fire, hurricane, earthquake, storm, or other catastrophe that is or threatens to be of sufficient severity and magnitude to warrant disaster assistance by the federal government.

The term "local governments" includes counties, cities, townships, school districts, reclamation districts, irrigation districts, or other units which qualify as separate legal governmental entities under the laws of the state.

Private institutions or agencies, even when impressed with a public interest, are not eligible applicants under the above referenced program.

The current minimum expenditures and obligations by the state and local governments for disaster relief purposes and all other disasters during the 12-month period immediately preceding a request for financial assistance is $1,500,000.00. On July 1, 1964, the minimum state and local government expenditures and obligations for disaster relief purposes will be $2,000,000.00 during the 12-month period immediately preceding a request for federal financial assistance under the federal Disaster Act referred to above.

When the governor believes that federal assistance is necessary to supplement the efforts and available resources of the state, he may request that the President of the United States declare a "major disaster area," under the provisions of Public Law 875, the federal Disaster Act.

11. On the 20th day of January, 1964, Governor Harold E. Hughes designated Ray C. Stiles Iowa Emergency Planning Director, and also created an Iowa Emergency Resources Management Planning Committee, assigning emergency functions to the members thereof, and directed that the following functions be performed to provide a means for emergency management of resources between the federal, state, and local governments in the event of a major Civil Defense emergency:

a. Prepare specific emergency action plans.

b. Recruit a standby organization to administer the action plans.

c. Develop procedures required for resource management.

d. Insure that the action plan will:

(1) Give consideration to every element in the state government, commerce, and industry, and assign specific emergency planning responsibilities to each, whenever applicable.

(2) Provide a Priorities Board on resources management.

(3) Provide for coordination with related federal agencies and state, county, and city authorities.

(4) Plans to be consistent with the national plan for emergency preparedness.

Chairmen and members of the following task groups have been designated, and they are well on the way in the preparation of the plans thereof:

Petroleum, Gas and Solid Fuels
Transportation
Construction and Housing
Public Information
Manpower
Electric Power
Water
Production
Telecommunications
Health
Economic Stabilization
Food

The estimated date for completion of these plans and conducting an initial test exercise of these plans is September 1, 1965.

12. During Fiscal Year 1965 (July 1, 1964 through June 30, 1965) primary emphasis will be given to the following, within manpower and budget limitations:

a. Establishing a joint county/municipal Civil Defense agency plan, and program in all counties within the State of Iowa.

b. Areas of shelter to include, but not to be limited to, identification, licensing, and stocking of known shelter areas to make them immediately usable.

(1) Increasing shelter capacity by:

(a) Encouraging modification of existing marginal public or private buildings to provide increased protection factor of 100 or more.

(b) Encouraging the identification and utilization of shelter spaces for less than 50 people.

(c) Encouraging the development of home shelters.

c. Increased readiness measures to include operational planning, direction and control, warning, and radiologic defense.

Simultaneously, within manpower and budget limitations, emphasis will also be given to the further development of communication service, police service, fire and rescue service, public information service, and other necessary pre-attack supporting programs.

RAY C. STILES
State Director

Mental Illness Related to "Diminished Responsibility"*

A little-noticed Iowa Supreme Court decision has opened the way for broader use of expert psychiatric testimony to aid juries in determining the degree of guilt in criminal cases.

Psychiatrists have long given testimony in Iowa criminal cases, but only within the framework of the ancient M'Naghten Rule. Attorneys desiring to raise questions about the mental condition of defendants have had to serve advance notice that they intended to use insanity as a defense. Psychiatric testimony under the M'Naghten Rule is limited to shedding light on whether the defendant can distinguish right from wrong. Juries are instructed to acquit those they find unable to tell right from wrong, on the theory they are not responsible for their acts.

The attorney for Ronald Gramenz, a former Fort Dodge man charged with first-degree murder, sought to use psychiatric testimony, but not for the purpose of conforming to the M'Naghten Rule. The testimony was intended instead to relate to the *degree* of guilt.

First-degree murder in Iowa is defined as murder committed "willfully, deliberately and premeditatedly." Testimony was offered in the trial court by a psychologist and a psychiatrist that the accused's mental condition was such that he could not have premeditated the crime. The trial judge, Harvey Uhlenhopp, of Hampton, in an instruction believed to be unprecedented in Iowa, advised the jury that it should consider this testimony in deciding whether the crime was murder in the first degree or second degree.

The jury returned a verdict of guilty of second-degree murder, which carries a penalty of from 10 years to life. The penalty for first-degree murder is death or life imprisonment.

The case was appealed to the Iowa Supreme Court by Gramenz on the ground that the trial court's instruction should have required the jury to consider whether the defendant's mental condition entitled him to conviction of manslaughter —which carries a maximum penalty of 8 years—or acquittal. The state argued that evidence of mental condition should not be considered at all.

The Supreme Court noted in its unanimous opinion that this was the first time the doctrine of "diminished responsibility" was being considered in Iowa. The court concluded that the trial court properly permitted psychiatric testimony to be considered by the jury beyond the bounds of the M'Naghten Rule. The court declared:

"We believe that failure to recognize there can be an unsoundness of mind of such a character as to negative a specific intent to commit a particular crime, is to ignore the great advancements which have been made in the field of psychiatry. The results which have been achieved confirm its growing reliability. We do not consider this position contradictory to our adherence to the right and wrong test of insanity. We do not pretend there are no mental disorders except those which qualify under this test. . . ."

The court quoted with approval this statement by an authority in the field:

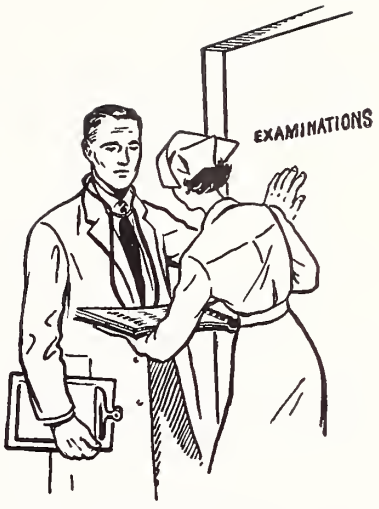
"There is no logic in the 'all or nothing' assumption underlying so many court opinions on the subject—that a person is either 'sane' and wholly responsible for all his acts, or 'insane' and wholly irresponsible."

Iowa thus joins about 10 other states that recognize mental illness can create "diminished responsibility" from criminal acts. The action of Judge Uhlenhopp and the Supreme Court opinion have shown an enlightened appreciation of the need to go beyond the M'Naghten Rule, by enabling juries to consider the insights into human behavior which psychiatry can provide.

* Editorial in the DES MOINES REGISTER, April 14, 1964.

Attend the AMA Annual Meeting
in San Francisco
June 21-25, 1964

THE DOCTOR'S BUSINESS



Health and Accident Premiums

HOWARD D. BAKER
Waterloo

For many years now, the Internal Revenue Service has steadfastly maintained that the portion of disability insurance for the provision of hospital and medical indemnity was deductible as medical expense—but that premiums on policies providing indemnity for loss of time or of earnings was not a deductible medical expense.

Leaning toward the conservative side, we have—until now—felt that an undue risk was involved in such a deduction. Not only would this deduction be subject to disallowance, but your entire return would be subject to review and/or audit.

Since 1962, four cases have been tried in four different jurisdictions of the U. S. tax court. Each decision has been adverse to the Revenue Service, allowing health and accident premiums in full as a medical expense—subject to the 3 per cent exclusion, if applicable.

On the basis of these events at tax-court level, we have carefully reviewed our position and feel that a change is dictated at this time. We now recommend the claiming of health and accident premiums as a deduction under certain circumstances.

First, you must be willing to accept a calculated risk. Since the Revenue Service has not yet acquiesced to the courts on this matter, it will probably continue its policy of disallowance. If you take the deduction and it is disallowed, you must either pay the tax and give up, or pay the tax and go to U. S. tax court, where the chances of a favorable decision are felt to be excellent.

Second, all other aspects of your return must be able to withstand close scrutiny. It would be sheer folly to deduct health and accident premiums if you had claimed sizeable deductions in other categories that are subject to partial or total disallowance.

Finally, you should not make a decision on this deduction until after you have discussed the matter frankly and completely with a tax consultant who knows your affairs intimately. Even then, claiming a deduction will probably serve little purpose unless you are prepared to follow through with litigation in tax court.

Ordinarily, we do not move upstream against the Revenue Service. Historically, however, there have been a few cases where the Service has tenaciously and foolishly held out against the courts. We believe our present opposition to be healthy and justified, and feel that this is one of the few situations where opposition is prudent in view of the probable outcome—yet to be decided.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

1963 Mental Patient Population

Patients who are residents of state and county mental hospitals in the nation decreased in number during 1963 for the eighth consecutive year, the U.S.P.H.S. announced on February 23, 1964.

The 1963 total of 504,947 public mental hospital patients represents a decrease of 9.7 per cent of the hospital resident population—or 53,975 fewer patients—since 1956, the first year in which the total number of resident patients in public mental hospitals declined. In the year 1962-1963, the decrease was 2.1 per cent.

The shrinkage has been achieved even though the number of persons admitted has increased, according to data assembled by the Biometrics Branch of the National Institute of Mental Health. The rise in admissions, which began in the mid 1940's, continued during 1962-1963, with a 6.8 per cent increase for that year. But net releases have almost doubled, from a total of 126,498 in 1955, to 247,228 last year.

During the same eight-year period, the report continues, the average per diem expenditure per resident patient in state and county mental hospitals has increased $2.75—from $3.06 in 1955, to $5.81 in 1963.

Iowa Association of Medical Assistants

Another Iowa First!

One of the aims and purposes of our organization is to provide an opportunity for its members to better themselves thru cultural and scientific programs. In February the State University of Iowa conducted a Leadership Training Workshop on the SUI campus sponsored by the American Association of Medical Assistants. AAMA selected 17 past and present officers to attend this workshop to train them for the work of conducting Leadership Seminars. Each of these 17 women was then assigned two states in which she would work with state education committees in conducting seminars to train state and local chapter officers and committee chairmen in their respective duties.

The material to be used in these state seminars was written by the AAMA Education Committee, has been printed, and is ready for distribution. The first Iowa seminar is scheduled for June 6 and 7 at Kepler State Park, Mt. Vernon. Mrs. Marian Little, past president of AAMA and IAMA, who took part in the SUI Workshop and has been assigned by AAMA to New Jersey and Iowa, will conduct the seminar.

Because lodging at the Park is limited, only 32 registrations can be accepted for this first seminar. Housing will be in six cabins in the Park, and meals and meetings will be in the Lodge.

Saturday, June 6

8:00-10:00 p.m. Orientation and Hospitality

Sunday, June 7

8:00 a.m. Breakfast

8:30-11:45 a.m. Purpose and Goals of Organization
Technics of Leadership

12:00 Noon Luncheon

1:00- 3:30 p.m. Buzz Session on Assigned Subjects
Methods of Effective Committee Work
Audience Participation

There will be mid-morning and mid-afternoon coffee breaks.

Two of the SUI instructors who taught the AAMA representatives in the February Workshop will monitor this IAMA seminar: Messrs. Don Sherrif and Jude West, from the Bureau of Labor and Management.

The AAMA Education Committee members have also been working individually for the past two years on a variety of subjects to be used in individual study and in group study clubs. The first of these, "Introduction to Anatomy for Medical Assistants," has already been published in the AMAA BULLETIN.

Linn County Medical Assistants are the first Iowa group to institute a study club. As a basis for their study, they will use the anatomy articles as well as the suggested study pattern and texts from the bibliography also prepared by the AAMA committee. Classes will be held one evening a month for six months, and they will be taught by persons qualified in their field—physicians, technicians or educators.

Upon completion of this course, study may be continued in similar manner on the following subjects:

"Medical Terminology"

"Personal Adjustment and Human Relations" (Medical Ethics and Etiquette)

"Medical Law and Economics"

"Office Skills and Procedures"

"Communications, Written and Oral"

"Examination Room Technics"

"Medical Terminology" is the next subject to be published in the AAMA BULLETIN, and members are urged to save all copies for their own use, or to assist in providing material for future study clubs.

Continued education and training in contemporary procedures is a challenge which the AAMA and IAMA Education Committees have accepted. Collectively and individually, we are striving to be more proficient in our work, and to be more useful members of our society and our respective communities.

HELEN G. HUGHES

Have you moved in the past few months? PLEASE send any changes of address to 529-36th Street, Des Moines 12. Communication is a necessity: Do help us keep our mailing list up to date. You are our best source of accurate information.

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

Poisoning by Organic Phosphate Insecticides

A special bulletin from the Division of Extension and University Services, State University of Iowa, Iowa City, Iowa, gives the following warning, from the Department of Pharmacology, the Department of Internal Medicine and the Institute of Agricultural Medicine, College of Medicine, State University of Iowa, regarding organic phosphate insecticides:

"The prevalence of corn rootworm in Iowa may result in widespread use of the organic phosphate insecticides which are potentially very poisonous to man. Toxicity results from ingestion, inhalation or absorption from the skin.

"*Symptoms* are mainly cholinergic in character and include visual disturbances (blurring and diplopia), salivation, sweating, nausea, vomiting, diarrhea and abdominal cramps. Inhalation of the insecticide is more apt to result in respiratory symptoms (dyspnea, sneezing and chest pain). Neurological symptoms occur with large doses and include anxiety, dizziness and confusion.

"*Physical signs* include small pupils (usually), pallor, sweating, bradycardia and involuntary micturition or defecation.

"*Treatment* must be rapid and specific. 1) Give atropine, 2 mg. intravenously, at once, and repeat at 5-10 minute intervals until skin becomes dry and flushed or until tachycardia occurs. 2) Use artificial ventilation if necessary. 3) Decontaminate skin, eyes or stomach. The skin may be washed with soap and water and the eyes with saline solution or water. Lavage of the stomach is effective if symptoms have not appeared, or induced vomiting after drinking of milk or water may be used. 4) Give intravenous fluids (saline and glucose) as needed to prevent dehydration. 5) Treat shock.

"*Prevention.* The skin surface should be covered with protective clothing and breathing masks are advised.

"The only laboratory test which is of value is the serum choline-esterase activity, which is depressed. This may not return to normal for a period of one week or longer after exposure. Very few laboratories are equipped to do this test.

"*References:* ARCHIVES OF ENVIRONMENTAL HEALTH, Vol. 5, p. 21 (July 1962); JOURNAL OF THE IOWA MEDICAL SOCIETY, 54:120-125, (Mar.) 1964."

The Iowa State University of Science and Technology, Cooperative Extension Service, Ames, Iowa, also is concerned about the use of insecticides and has issued the following statement, January 1964:

"URGE INSECTICIDE USERS TO READ AND FOLLOW DIRECTIONS ON THE LABEL. Avoid insecticide use when wind currents are such that the chemical might drift onto adjacent forage crops or pasture. Failure to take all precautions may result in excessive residues appearing in meat, milk or harvested crops. Such contamination may result in seizure by governmental agencies. ALL INSECTICIDES ARE POISONS AND SHOULD BE USED WITH CARE. Do not overdose. Wash hands following use of chemical, and if any is spilled on clothing, change to clean, dry garments. Destroy completely all empty insecticide containers. Do not re-use. Do not use lindane vaporizers in the home."



Dr. Arthur P. Long, the new acting commissioner of health for the State of Iowa, was invited by the speaker to address the 1964 session of the IMS House of Delegates.

Morbidity Report for Month of April 1964

Diseases	1964 April	1964 March	1963 April	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	613	496	240	Black Hawk, Dubuque, Hancock, Johnson, Polk
Typhoid fever	0	3	0	
Smallpox	0	0	0	
Measles	1756	418	879	Entire state
Whooping cough	5	0	4	Potawattamie, Scott
Brucellosis	15	6	17	Linn, Polk, Scott
Chickenpox	596	390	738	Des Moines, Hancock, Polk, Scott, Woodbury
Meningococcic meningitis	1	1	1	Dallas
Mumps	2070	1371	323	Boone, Dubuque, Polk, Pottawattamie, Scott, Woodbury
Poliomyelitis	0	0	0	
Infectious hepatitis	23	24	30	Black Hawk, Linn, Polk, Scott, Warren
Rabies in animals	55	46	38	Emmet, Muscatine, Sioux, Winneshiek
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	4	15	23	For the state
Syphilis	81	67	55	For the state
Gonorrhea	88	82	86	For the state
Histoplasmosis	2	1	0	Linn, Polk
Food intoxication	0	0	0	
Meningitis (type unspecified)	3	3	2	Cedar, Muscatine, Poweshiek
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	1	
Salmonellosis	4	3	5	Johnson, Linn, Muscatine, Scott
Tetanus	1	0	0	Tama
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	1	0	Pottawattamie
H. influenzal meningitis	0	0	0	
Amebiasis	5	0	0	Boone
Shigellosis	1	4	3	Wapello
Influenza	382	392	126	Polk, Story

Iowa Vaccination Assistance Project

A recent U. S. Public Health Service national survey on the immunization status of persons in the United States found the people of our country are not adequately immunized. Nationally, the best-immunized groups are elementary school youngsters, although one-third of them are still unprotected. Two-thirds of the children in the pre-school age group are incompletely protected. Less than one-fifth of the adult population is protected. As a result of the findings in the national survey, Congress, in 1962, passed a national Vaccination Assistance Act. Under this Act, funds were made available to the states to promote and intensify vaccination programs. In November, 1963, the Iowa State Department of Health was awarded a grant to promote immunization within the state.

The Iowa Project Plan, as approved by the U. S. Public Health Service, includes the following activities:

a. State-wide random sampling surveys to ascertain the current immunization level of the total population by age groups and to select specific areas or populations most in need of more intensive services.

b. Specific populations will be selected for initial programing activities. Survey data concerning these populations will be presented to local medical societies, civic groups and other voluntary organizations, and they will be asked to cooperate in the development of an intensive immunization program to fit the specific needs of a community.

c. Immunizations will be made available to all susceptibles under five years of age in the selected program area, either through physicians' offices, through special clinics conducted in cooperation with the local medical societies, or through public clinic facilities.

d. Intensive community awareness programs will be developed prior to and during each community immunization drive, in an effort to motivate the protection of all susceptibles in the community.

e. Post-program surveys will be conducted as soon as practical, in an effort to determine the effectiveness of the program and to delineate possible further activities.

Vaccine Available Through This Program

Although the State Department of Health is definitely interested in increasing immunizations against all preventable diseases, funds for the purchase of biologics under the National Vaccination Assistance Act are limited to immunizing agents against only (1) poliomyelitis, (2) diphtheria, (3) tetanus and (4) whooping cough. The purchase of vaccine is further limited to that used for children

under five years of age. We believe that funds in our grant will be adequate to provide us with any amounts of vaccine requested for this purpose.

We must clearly state that immunizing agents for persons age five and over which are to be furnished by the State Department of Health must come from other limited funds, and cannot be furnished under the Vaccination Assistance Act. No funds are available to purchase poliomyelitis vaccine for the age group five and over, or to purchase measles vaccine for any age group.

Through the cooperation of practicing physicians, official health agencies, voluntary organizations and volunteers, the Project will encourage and assist local communities in intensive educational campaigns and administration of free vaccine to children under five who would not otherwise be protected. It is hoped that this program, aimed directly at pre-school children, will also serve to point out the need for better immunization protection in school children and in still older age groups.



Dr. Fred Sternagel, of West Des Moines, is shown as he was about to receive a plaque emblematic of the IMS Award of Merit from Dr. Samuel P. Leinbach, chairman of the Board of Trustees, at the Society's annual banquet on April 28. Dr. Sternagel has served the Society significantly as chairman of its Committee on Medical Service, as its president, and most recently as chairman of its Relative Value Study Committee.

Iowa Chapter of the American Academy of General Practice

16th Annual AAGP Meeting

History repeated itself at the 16th Annual Scientific Assembly of the American Academy of General Practice held April 11-16 in Atlantic City when, for only the second time during 16 Scientific Assembly years, physician registration fell below the two thousand mark, to 1,854. The other time this occurred was in 1952, also in Atlantic City. In keeping with the spirit established, attending members were in agreement that despite decreased attendance, the Atlantic City Scientific Assembly will be remembered as one of the greatest for enthusiasm, an outstanding program and cordial hospitality.

The new president-elect of the American Academy is Dr. Amos N. Johnson, of Garland, North Carolina. The speaker, Dr. Carroll Witten, of Louisville, Kentucky, was re-elected by acclamation, marking his fifth term in that position. Dr. Herman E. Drill, of Hopkins, Minnesota, was elected vice-president by acclamation. The three new members of the Board of Directors are Dr. Lloyd Southwick, of Edinburg, Texas, Dr. Robert Price, of Phoenix, Arizona, and Dr. Edward Kowalewski, of Akron, Pennsylvania.

Among the actions of the Congress of Delegates was the rejection of a proposal to retreat from a position taken four years ago to raise educational requirements for admission to the Academy and to urge increased efforts for the establishment of a sufficient number of approved training programs. The delegates rejected a proposed "fellow" classification of membership which would have reduced the increased standards which were adopted by the 1960 Congress and which are to become effective in 1966. The Board of Directors and Chairman Amos Johnson were commended for establishing liaison with the Joint Commission on Accreditation of Hospitals. A substitute resolution was adopted which would require each member to submit evidence of having completed 150 hours of "approved study" each three years, at least 25 hours of which were obtained at meetings organized and conducted by the Academy or one of its constituent chapters. The Congress of Delegates rejected the reference committee's recommendation and voted to retain the present name of the Academy. It endorsed the recommendation of Academy President A. E. Ritt that the Academy support *only one program* of graduate medical education, making obstetrics and surgery mandatory. It adopted a recommendation of the Commission on Education which proposes that each state chapter with a medical school in its area seek to establish one or more of the following programs in such schools: preceptorships, lectures and seminars, family care clinic, and comprehensive care supervision by practicing physicians in out-patient department.

Dr. Julius Michaelson, of Foley, Alabama, will serve the American Academy as president during 1964-65.

Each year, during the Scientific Assembly, 20 scholarship awards for graduate training in general practice are presented by the Mead Johnson Company. This year Iowa had two winners, Dr. Neal Adams Robinson and Dr. Lowell E. O'Connor, both of whom are serving as interns at Broadlawns Polk County Hospital. Drs. Robinson and O'Connor will be presented their awards at the Spring Postgraduate Conference at Okoboji, Iowa, June 11-13. Dr. Robinson was a special guest of the Mead Johnson Company in Atlantic City to receive the one-millionth dollar granted by the Company.

Twenty-three Academy members from Iowa attended the Assembly in Atlantic City.

Sixteenth Annual Scientific Assembly

Iowa Chapter of the AAGP

Hotel Savery

Des Moines, Iowa

September 14-15, 1964

Woman's Auxiliary News

Thoughts From the President

June is an excellent time for Auxiliary members to take a good look at their past year's activities. Did your Auxiliary projects and programs reflect membership interest? Did you, as an individual member, participate in Auxiliary projects and carry a fair share of the responsibility for making the year a success?

Organizations, like houses, need to rid themselves of outdated and no longer useful possessions, making room for better use and enjoyment of the necessary and the wanted. Tailor your Auxiliary affairs to fit your organization's size, your members' interests and your community's needs, and to complement the activities of your medical society. A single project well done by the small Auxiliary will accomplish far more than several poorly-executed plans.

Your officers hope personally to visit many organized Auxiliaries and members-at-large this year. In accord with the three-year plan, your president will concentrate on the Central Area and will welcome invitations to be a guest at your regular meetings. However, any Auxiliary that needs or wishes help will be given prompt attention.

The success and growth of any organization is dependent on the interest and efforts of each member. The Auxiliary is your organization, and as a member of it, you should make your voice heard in its management. Let us hear your ideas, your suggestions and, yes, even your criticisms. Working together, we can achieve our goals and best reflect the dedication that each doctor's wife shares with her husband.

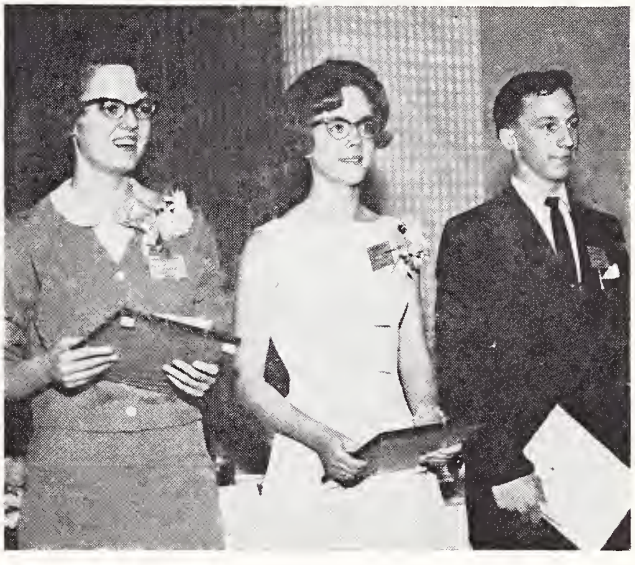
—Jane Ellis (Mrs. H. G.)
President

Jane King Memorial Fund

As a result of requests received from the many friends of the late Mrs. Dean H. King (Jane), the Health Education Loan Fund of the Woman's Auxiliary to the Iowa Medical Society will establish a loan fund in her memory. To be known as the Jane King Memorial Loan Fund, it will be used to provide full or partial tuition, on a loan basis, for nursing education.

Mrs. King's unceasing efforts to help students familiarize themselves with the rewards of health careers and her own background in nursing education make this Fund a fitting tribute to her memory. Constantly active in Auxiliary work, from the county to the national level, since her marriage to the late Dr. King, she served as president of the Iowa Auxiliary, she was active in organizing Future Nurse Clubs throughout the state, and she was a charter member of the Iowa Nursing Careers Committee, now the Health Careers Council of Iowa. In her home community, she was sponsor of a Health Careers Club at the Spencer High School.

This will be the second memorial established within the framework of the Health Careers Loan



These three young people were the state winners for 1964 in the essay contest for high school students sponsored by the IMS Woman's Auxiliary. As in past years, the topics between which the contestants might choose were "The Advantages of the American Free Enterprise System Over Communism" and "The Advantages of Private Medical Care." Ernest Guyer, of Clermont, a senior at Valley High School, Elgin, won the first prize of $100 at the state level, and subsequently took sixth place and another $100 in the national contest sponsored by the American Association of Physicians and Surgeons. Marietta Moravetz (left), a senior at the Community High School in Ogden, won the second prize of $50 in the state contest and afterwards took eighth place at the national level and won an additional $75. Miss Patricia Menke, of Salem, an eleventh grader at St. James High School, St. Paul, Iowa, won a prize in last year's state contest, and this year took third place and an award of $25.

Fund. In 1962, Dr. F. W. Mulsow, of Cedar Rapids, gave $500 in memory of his wife, also a past-president of the Iowa Auxiliary, to be used for loans to deserving students wishing to enter health-career fields.

Persons wishing to contribute to the Jane King Memorial Fund are asked to send their gifts to the HELF chairman, Mrs. E. A. Larsen, 323 East Oak Street, Centerville. Checks should be made to the Jane King HELF Memorial Fund.

IDEA EXCHANGE

Recognizing that physicians and their wives receive an above-average number of requests to support financially or to join new organizations, members of the Franklin County, Pennsylvania, Auxiliary invited Mr. Paul J. Giltinian, of Letterkenny Army Depot, to be their speaker at a recent luncheon. His topic, "Communism in the United States," provided helpful information on the constant danger of unwittingly becoming affiliated with communist-front organizations.

* * *

To your next meeting, why not ask each member to bring the names and addresses of two persons over 65 years of age? These will provide you with good contacts for letters opposing King-Anderson legislation.

* * *

The Woman's Auxiliary to the St. Louis, Missouri, County Medical Society invited school officials, Parent-Teacher Association officers, church leaders and the heads of all civic clubs to its annual Community Service Program. The topic was sex education, and the speakers were physicians and Mental Health Association representatives.

* * *

Don't throw away the books and games your children have outgrown. Scout troops, day-care centers, etc. can put them to good use. There is an organization in your community that will be grateful for them. Ask a member of your Auxiliary to park her car in front of your meeting place, and load the books and games into it as your members arrive. There will be many helping hands to unload them when you have delivered them to their destination.

* * *

The Auxiliary to the Ohio County, West Virginia, Medical Society sponsors and works with a Girl Scout troop for the mentally retarded. Ten girls from eight to 20 years of age are thus being given an opportunity to experience the joy of belonging.

How about sending in your ideas for Auxiliary activities, if you have found that they bring results? Everyone welcomes a new idea. Don't hide genius; it is a rare plant that blooms best in the light. What have you done, and how did you do it? Share your information by dropping a line to Idea Exchange, WOMAN'S AUXILIARY NEWS, Woman's Auxiliary to the Iowa Medical Society, 529-36th Street, Des Moines 50312.

* * *

Good programs are the result of good planning. A big name and fancy props are no guarantee of a successful meeting. The contribution to the community is the thing that counts.

COUNTY AUXILIARIES

Black Hawk

The Black Hawk County Medical Auxiliary's vision-screening program, which is conducted for kindergarten pupils regularly each fall, was supplemented by a two-day testing period in May of this year. The two-week fall program is conducted by volunteer workers sponsored by the Black Hawk Auxiliary, and is available to all children entering kindergarten in the fall. Mrs. Robert Miller and Mrs. Thomas Thornton are co-chairmen for the project.

Clinton

At its April meeting, the Auxiliary to the Clinton County Medical Society entertained the Auxiliary to the Clinton County Dental Society. The festivities began with a 6:30 dutch-treat dinner at the Frontier Motel dining room, and the evening was spent socially. Cards and games were provided, but visiting and fellowship were enjoyed by all present. Potted mums served as decorations and were then given as prizes.

At a short business meeting following the party, officers were elected to serve the Clinton County Medical Auxiliary for the coming year: president, Mrs. James Taylor; vice-president, Mrs. Thomas Wellman; secretary, Mrs. A. L. Jensen; and treasurer, Mrs. D. R. Schumacher.

Johnson

Mrs. F. Miles Skultety is the newly-elected president of the Johnson County Medical Auxiliary. Also elected to office for the coming year were Mrs. George H. Scanlon, vice-president; Mrs. Albert McKee, recording secretary; Mrs. Andrew Garvy, corresponding secretary; Mrs. Arnold

Chong, treasurer; and Mrs. Chester Miller, parliamentarian.

Marion

The Marion County Auxiliary met at the Marion County Home southwest of Knoxville, recently, to present a $500 check to the managers of the Home. Mrs. T. D. Clark, president, made the presentation. The funds were earned by the Auxiliary in various activities, and were given to the County Home because that institution constituted its project for the year. At the Home, a building is being planned which can be used for chapel services, entertainments and parties for the residents, and the Auxiliary's money will be used to further that plan. The Auxiliary members served cake to the residents, and lunch was served to the 10 Auxiliary members present.

The Marion County Auxiliary also observed Doctor's Day, in March, by presenting a red carnation to each of the doctors. As a further observance of the day, the Auxiliary entertained the doctors at dinner at Runt's Steak House, following a social hour at the home of Dr. and Mrs. Dwight Mater.

Mrs. Yme Sloterdyk is the newly-elected president of the Marion County Auxiliary.

Polk

On May 8, the Polk County Auxiliary met for luncheon and its final meeting of the season at Camp Sunnyside, operated a short distance north of Des Moines by the Iowa Society for Crippled Children and Adults. Mrs. Daniel W. Coughlan was installed as president, and Mrs. Paul From as president-elect. The other officers for the coming year are Mrs. Olin A. Elliott, first vice-president; Mrs. Louis J. Noun, second vice-president; Mrs. Lawrence O. Ely, recording secretary; Mrs. Richard A. Wheeler, treasurer; and Mrs. Henry C. Blount, corresponding secretary. Mrs. Noble W. Irving, Jr., Mrs. Victor G. Parson and Mrs. Benjamin Kilgore were appointed auditor, historian and parliamentarian, respectively.

Following the business session, the group was conducted on a tour of the Camp.

Wapello

The May meeting of the Wapello County Auxiliary was a morning coffee at the home of Mrs. Loran Coppoc. Co-hostesses were Mrs. Nelson Melampy and Mrs. Robert Dalager.

A Note From the Editor's Desk

If you haven't seen a copy of the preconvention activities to take place in San Francisco, June 21-25, do look in your husband's copy of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

A fine program has been planned for the Auxiliary members and other doctors' wives. A trip to the Pacific Coast would be a nice vacation for you. A cordial invitation is extended to all. Headquarters will be at the St. Francis Hotel, on Union Square. Mrs. Eugene S. Hopp and Mrs. Harold A. Hill, of San Francisco, the chairmen of the local committee on arrangements, tell us that on Sunday, June 21, a delightful Tea and Fashion Show has been arranged, honoring Mrs. C. Rodney Stoltz and Mrs. William H. Evans, from four to six o'clock.

"This will be a most unusual and beautiful Fashion Show," they predict. "Unlike the customary department-store or designer presentation, it will be overlaid with Eastern pageantry. The program will feature magnificent Chinese robes, and it will show how these exotic ceremonial costumes can be adapted to modern Western wear, from sports clothes to glamorous formal wear. The creations will be modeled, for contrast, both by beautiful Chinese and occidental mannequins.

"The Oriental Fashion Show is one of the highlights for visitors to San Francisco, and all who have seen it have found it different and stunning. We are certain that members of the Auxiliary and their friends will be no exception."

Advance registrations can be made through Mrs. Alfred A. deLorimier, tickets chairman for the convention, 103 Font Boulevard, San Francisco 27, California. The price is $3.50, and if you wish to forward a check, please make it payable to the Woman's Auxiliary to the American Medical Association.

Convention sound good to you? MEET YOU THERE!

Have you moved in the past few months? PLEASE send any changes of address to 529-36th Street, Des Moines 12. Communication is a necessity: Do help us keep our mailing list up to date. You are our best source of accurate information.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 50312

President-Elect—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

Recording Secretary—Mrs. M. E. Olsen, Minden 51553

Corresponding Secretary—Mrs. C. W. Latchem, 942 56th Street, Des Moines 50312

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Throckmorton, 1201 64th Street, Des Moines 50311

The 1964 Tournament of the Iowa Medical Golf Association

At the 1964 tournament of the Iowa Medical Golf Association, played on Sunday, April 26, at the Wakonda Club in Des Moines, the prize for low gross score was won by Dr. William Telfer, of Waterloo, with a 77. Second, with a 79, was Dr. Don O. Newland, of Des Moines. Both are Ob. & Gynec. specialists. HOW COME? Thirty-seven non-members of our club played. Thanks to them for their participation. Twelve members of our club played, making a total of 49 players. We were afforded a fair day, and we hope that everyone had a good time. Only 20 showed up for dinner.

The previous winners of the cup provided by Whylie the Opticians, Inc. and given to the player who carded the lowest gross score have been as follows: 1956 Dr. R. B. Allender, Des Moines; 1957 Dr. N. M. Johnson, Clarinda; 1958 Dr. M. D. Ravreby, Des Moines; 1959 Dr. D. O. Newland, Des Moines; 1960 Dr. William Catalona, Muscatine; 1961 Dr. N. M. Johnson, Clarinda; 1962 Dr. R. B. Allender, Des Moines; 1963 Dr. C. F. Watson, Fairfield.

Nine players failed to turn in their scores, and we were sorry about that. Closest to the pin on No. 9 was Dr. Telfer. The longest drive on No. 18 was made by Dr. T. A. Burcham, of Des Moines. Closest to the flag on No. 1 couldn't be determined satisfactorily because someone moved the flag. The directions hadn't been clearly understood. Seven players had one birdie each for 18 holes, and two had two birdies each for 18 holes, Dr. J. L. Hoyt, of Creston, and Dr. Howard Turner, of Des Moines.

We are obliged to the following donors for the prizes: Abbott Laboratories; Astra Pharmaceutical Products; Ciba; Geigy Pharmaceuticals; Hammer X-ray Corporation; Merck, Sharp & Dohme; Mead Johnson Pharmaceutical Products; Pepsi-Cola Co.; Picker X-ray Inc.; Roche Laboratories; Schering Co.; E. R. Squibb & Sons, Div. of Olin-Mathieson Chemical Co.; Warren-Teed Pharmaceutical Co. The local donors were: Kucharo Clothiers; Newburn Clothiers; Robinson Wholesale Co.; Ford-Hopkins Drug; Sipes Prescription Pharmacy; King's Pharmacy; Walgreen Drug Co.; Katz Drug Co. Many thanks to them; their contributions were all appreciated.

Thanks to the doctors who made advance registrations.

Your old chairman,
HAROLD J. MCCOY, M.D.

MAA Caseload Increases

The caseload of MAA more than doubled during the month of March, as the recently instituted program swung into high gear, according to the Iowa Department of Social Welfare's report on April 2.

There were 1,557 persons receiving benefits totaling $194,571 during March, as compared to 690 cases and benefits totaling $77,398 in February. So far this year, the Department had paid out a total of $275,536 in MAA benefits. The Department's monthly report also showed that expenditures for the four public assistance programs amounted to $4,167,581 in March, up $44,855 from the February figures.

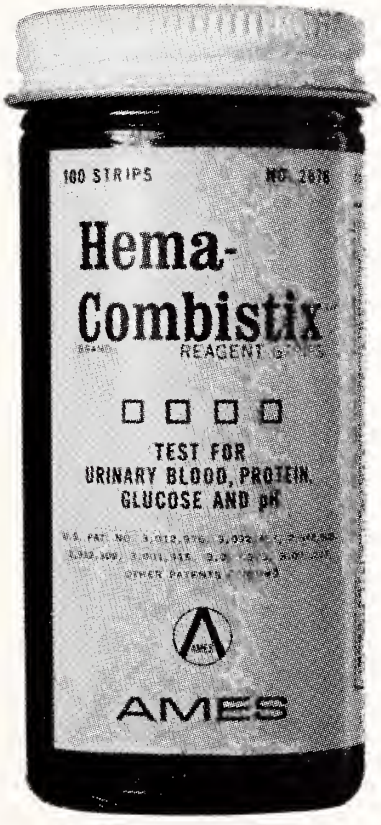
Aid to Dependent Children led the upward trend with a total of $1,322,721 in benefits paid, an increase of $31,096 over February. An increase of 48 cases and higher medical-care costs accounted for the ADC increase.

Increased costs of medical and nursing care were responsible for a $13,046 rise in the expenditure for Old Age Assistance, despite a reduction in the caseload. There were 90 less receiving OAA benefits in March, but the total expenditure for the program climbed to $2,631,224.

Aid to the Blind benefits during March totaled $123,870, up $955 over February, but the Aid to Disabled program showed a reduction of $242, with a total expenditure of $89,766.



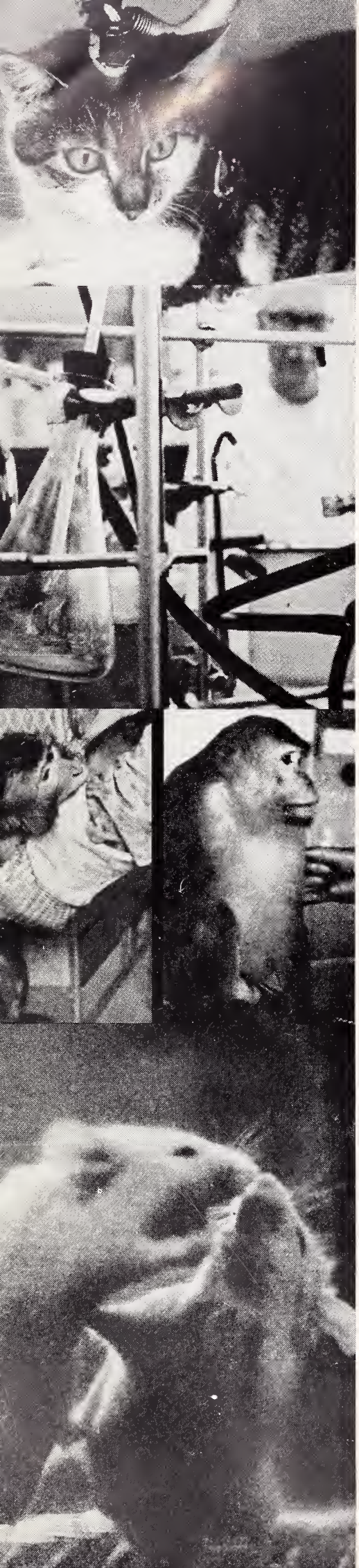
The photographer took a picture of one of the sessions of the 1964 IMS House of Delegates in which an exceptionally large number of physicians are recognizable.



WARNING:
MAY BE
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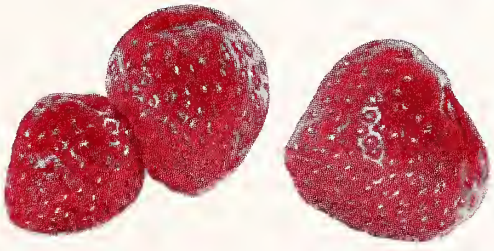
JOURNAL of The IOWA MEDICAL SOCIETY

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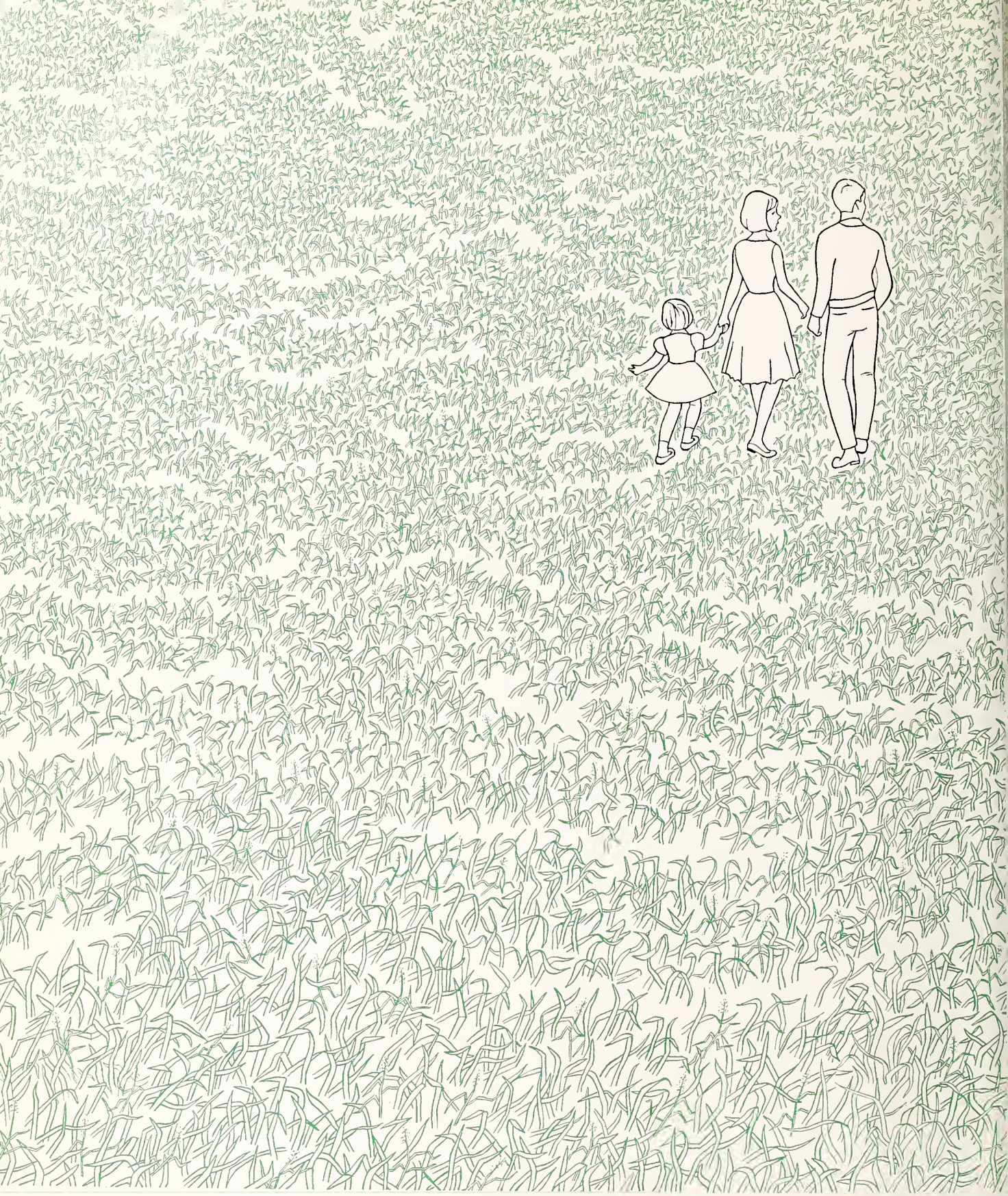
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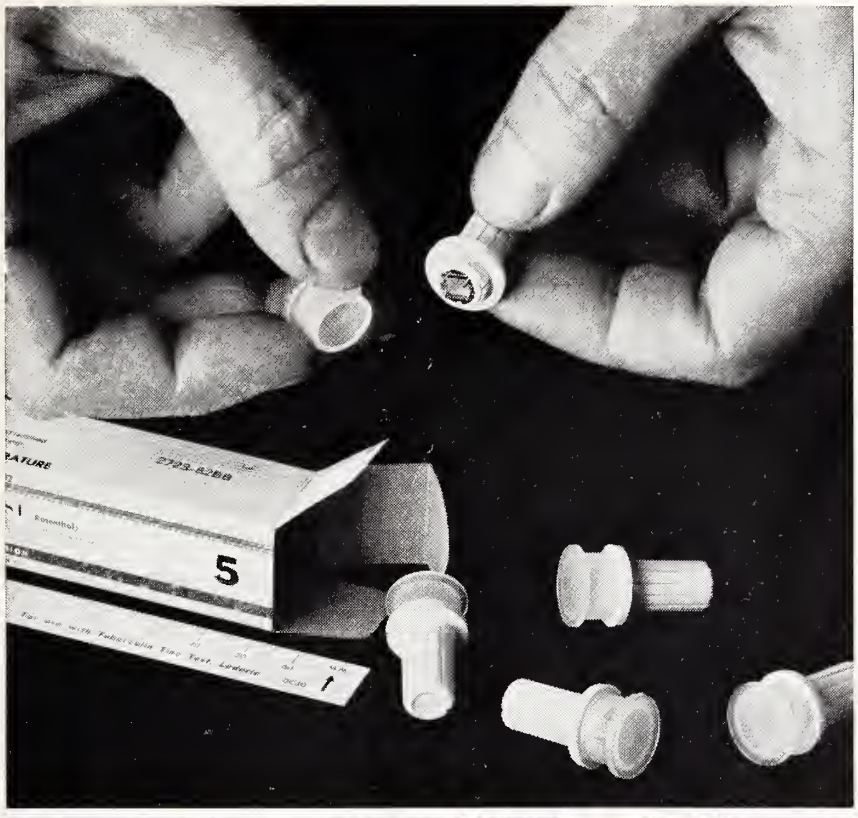
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Unity

The IMS President's Address

C. V. EDWARDS, M.D.
Council Bluffs

If your memory is very good, you may recall that when I addressed you at the Annual Meeting of the Iowa Medical Society in 1963, I asked you to rid yourselves of the apathy that was causing many of you, in large measure, to leave the solution of medicine's problems to other men—indeed to postpone or even neglect reading issues of the news bulletin and other materials sent you by the IMS, and thus to remain less than fully informed about these problems.

Whether or not my words helped make you and your colleagues more dutiful about reading your mail and attending medical society meetings, it seems that IMS members, generally, have become more alert to the objectives and to the activities of organized medicine during the past year. But you and I still have no reason for self-congratulation and complacency. We have suffered no further setbacks in the guerilla campaigns that have been waged against us, but we certainly haven't won the war.

Let me give you the startling dimensions of the war in which we are engaged. Since 1933, a socialist movement—not to be confused with the nearly defunct Socialist Party of the United States—has been operating in this country behind a mask called "National Planning" or "Planned Economy." It is based on the theory that government should assert its right to own parts of the economic system outright, or to control the private owners to whatever extent it may see fit. This theory does not require the government to take over and operate *every* farm, shop, mine and factory, but it does require it to seize and run the great basic functions of credit, electric power, fuel, transportation, insurance and welfare. "National Planning" or "Planned Economy" is the enemy that opposes us; and either government ownership or complete government control is the objective that our enemy seeks to win.

Health services constitute the segment of the American economy in which we physicians are most interested. "National Planning" or "Planned Economy" set out, in 1940, to make the federal government dominant in (1) the construction of hospitals and related facilities; (2) expansion of public health services; (3) financing medical education and research; (4) financing medical care for individual citizens; and (5) protecting individual citizens against loss of income during sickness and disability. Within 19 years, it had reached 70 per cent of its goals!

WE MUST ATTRACT AND HOLD ALLIES

The hour is late, and we doctors are too busy caring for the sick to devote enough time and energy to our running battle with this enemy that would deprive us of our collective and individual liberties. But even if we could do so, we could accomplish little by working at the task as separate persons. We need to establish unity within our ranks. In addition, we need to accomplish a more inclusive unity.

Though the membership of the American Medical Association now exceeds 200,000—and 200,000 is an impressive number—we physicians need allies. The principal source from which we can recruit allies consists of all the other men and women who work with us in the allied health professions—the dentists, the pharmacists, the deans and faculties of medical schools, the veterinarians, the drug manufacturers, the nurses and technicians, the hospital trustees and administrators, the nursing home proprietors, the health department personnel, and the health insurance and prepayment underwriters.

Businessmen and other civic-minded citizens can be called upon to help us preserve the private system of medical care, not only for the medical profession but—more importantly—for the public. Our major efforts should be directed toward strengthening our ties with the members of the health-care team. Physicians, together with members of the other groups that I have enumerated, total no fewer than 2½ million persons—or one out of every 17 persons in America.

In attracting and holding allies, each of us doctors needs to rid himself of myopia and tunnel-vision. In most of us, fortunately, these ailments are non-physiologic, and correcting them will require little more than an exertion of willpower. What we need to do is to focus upon our still-distant major objective, rather than upon our lesser concerns. We need to see, recognize and offer to discuss the difficulties, each of which is of overriding importance to one or another of the allied health groups. Only thus can we ensure ourselves of their help.

I won't have time to talk about, or even to list, all of the problems that we can assist these groups in solving. And please don't think I am suggesting that physicians should capitulate on each issue that I mention. Here, however, are some of the stumbling blocks that are impeding full cooperation between physicians and their potential allies. By cultivating a breadth of vision, we can enable ourselves to see that our stake in each of these issues—and in all of them together—is far less than our concern about attaining our ultimate goal—the preservation of freedom for the individual to practice medicine as he thinks best. Certainly this is in the public interest.

The American and the Iowa Pharmaceutical Associations are disturbed about physician ownership of drug stores, and contend that especially when a pharmacy is controlled by a physician clinic-group, competition is severely curtailed. We doctors have responded that we should have the right to invest in any legitimate enterprise, and that if the pharmaceutical associations don't like certain ownership arrangements, they should persuade their member pharmacists not to countenance them. We understand that steps have been taken by the Iowa Pharmaceutical Association to eliminate from its membership those pharmacists who have entered into clinic arrangements which fail to satisfy its ethical requirements. The legislatures in three states have enacted laws which prohibit physician ownership of pharmacies, but the IMS and the AMA would prefer to have the matter settled otherwise, and we are confident that this will occur, if appropriate channels of communication are maintained between the IMS and I.Ph.A.

Many deans and faculties of medical colleges have come to depend upon federal grants of various sorts to such an extent that, upon relinquishing the presidency of the American Association of Medical Colleges, Dr. John E. Deitrick, dean of the Cornell University College of Medicine, proposed moving the headquarters of the AAMC to Washington, D. C., so that it might be as close as possible to the medical schools' major source of support. In the same address, he voiced a preference for the recently authorized low-interest federal loans to medical students, over the AMA's plan for guaranteeing bank loans for students, contending that a debt to a bank, even at the prime interest rate, is by no means preferable to a debt to the federal government at a lower rate of interest. And, he declared that federal scholarships would be preferable to any sort of loans.

Statements of these sorts, especially when they come from the dean of a medical school in a private university, are pretty discouraging to the proponents of free enterprise, but we can remind ourselves that the headquarters of AAMC still remain in Chicago, and that a majority of medical-school people haven't yet espoused Dr. Deitrick's ideas. It is up to us, therefore, to increase our support of the AMA-ERF and Iowa Medical Foundation student loan funds, and to persuade larger numbers of medical-school professors to join our medical societies and to share our social and economic ideals.

In recent years, some hospital trustees and administrators have exhibited an inclination to align themselves with government. Perhaps we can alter this tendency by acknowledging the seriousness of their difficulties, and by making a determined effort to help solve them. The public expects these people to maintain quality in their institutions, but they cannot control the quality and quantity of medical care. Rather, it is up to the medical profession to keep emergency rooms staffed around the clock and on every day of the week; to establish active tissue and transfusion committees; and to maintain up-to-date medical records.

Nursing home proprietors have a difficult row to hoe. With the best of intentions, in most instances, they are trying to provide aged persons and convalescents with safe and comfortable places in which to live, and with the types of care they need, without charging prices out of proportion to the patients' ability to pay. Yet, abetted by the general hospitals—which regard the nursing homes, in some degree, as their competitors—the federal government has set unrealistically high standards, under the Hill-Burton program, for "bricks and mortar," staffing, and many other features of nursing homes. In an attempt to remedy the situation, the AMA is helping the American Nursing Home Association to set up an accreditation program for nursing homes, and we can expect that the resultant standards won't be impossible for the well-operated ones of them to meet.

In the meantime, we physicians can perform a valuable service by counseling the individual proprietors with whom we come into frequent contact —suggesting ways in which their institutions can be improved at an expense that will not necessitate steep increases in rates. If most nursing homes, and the care provided in them, can be made satisfactory, they will provide us our best means of helping to slow the rise in the cost of health care.

Health insurance and prepayment underwriters are our very good friends, but they can be expected to work harder in pursuit of our common goal if we take additional steps toward holding down the costs of insurance benefits. The industry would like to see the establishment of hospital-utilization committees, and since we are the people who decide when patients are to be admitted to hospitals, and when they are to be discharged, it is we who must create and staff those committees. These insurance and prepayment underwriters insist that there is a close relationship between the promptness with which patients are discharged and the current occupancy rates of individual hospitals, and they may be right.

PHYSICIANS MUST REMAIN UNIFIED

Up to now, I have been pleading with you to cultivate a greater awareness of the needs and

desires of members of the health team who are outside the private practice of medicine. Finally, I ask your help in ending the cross-purposes and misunderstandings within the private practice of medicine.

Our foe is fully aware of the advantage that will accrue to him if the medical profession is divided. Therefore, we must be on the constant alert to detect any divisive tactics which would pit specialist against specialist; specialist against general practitioner; or, in general, M.D. against M.D. In my judgment, this type of activity constitutes one of the greatest threats to our profession.

With all the strength at my command, I want to emphasize that the primary responsibility for representing the interests of the medical profession in matters relating to social or economic issues must be assumed by the AMA, at the national level, by the IMS, at the state level, and by the respective county medical societies at the local level. Thus, as members of our respective specialty societies, academies, and other organizations related to medicine, let's take care not to be led up the garden path by our adversaries who are expert in utilizing "splintering" technics.

At the nation's capitol, a new legislative proposal (S. 855) would make it mandatory for the states to establish metropolitan planning agencies, and would establish uniform rules and regulations for them. All local projects would have to be reviewed, and in most cases, recommended by these new agencies before they could qualify for federal grants. Similarly, the current proposal to extend the Hill-Burton program for several more years (H. R. 10041) includes a provision that proposals for the construction of new hospitals or for the renovation of existing ones would be eligible for federal grants only if they were in accord with state health facilities plans.

No one has any quarrel with voluntary planning. It is obviously a waste of money for hospitals no more than two or three miles apart to install duplicate artificial kidneys, duplicate Cobalt radiotherapy units, or duplicate facilities for open-heart surgery. The administrators and medical staffs of such hospitals—hopefully—can be relied upon to avoid such wastefulness without any compulsion from government.

But let's consider the implications of compulsory area planning. In a predominantly rural state like Iowa, funds requested for the construction or renovation of operating rooms for anything other than minor surgery could easily be denied to all but about a dozen hospitals. Such a development would certainly downgrade the status of the general practitioner. And by requiring patients to be transported many miles from their homes for all major procedures, it would constitute highly questionable medicine.

The next step could be for the area-wide programs to result in general practitioners' being denied privileges in the major area hospitals, and the Iowa physicians permitted to practice in hospitals would then have been cut in half!

When Congress originally approved the Hill-Burton Act, in 1946, it had no intention of using federal grants as a means of bringing private, community and county hospitals under the direct regulation of federal agencies. But in the series of changes that have been made in the program since that time, one can easily see the handiwork of our arch-enemy, the National Planners. Instead of just helping to build or remodel hospitals, Hill-Burton funds now can be used to construct research and medical-education facilities, nursing homes that compete with privately operated ones, and diagnostic and medical-treatment centers. Now in the companion bills H. R. 10042 and H. R. 10043, money would be provided, not merely for bricks and mortar, but for training physicians, public-health personnel, registered nurses and practical nurses!

Incidentally, the imposition of hospital rules by an agency of the federal government is by no means a remote possibility. In testimony presented at a hearing on H. R. 10041, a few weeks ago, Dr. F. C. Coleman, of Des Moines, chairman of the AMA Council on Legislative Activities, asked the House Committee on Interstate and Foreign Commerce to add an amendment to the bill asserting specifically that the acceptance of federal funds would not bring a local hospital under strict federal control. Subsequently, some of the Congressmen have argued against the addition of such an amendment.

During the coming years—indeed within the next few months—physicians will need friends, and above all they will need unity within their own major organizations. Some people feel that a significant segment of the leadership of the American Hospital Association would favor approving health care for the aged under some form of Social Security financing. Mr. Walter McNerney, president of National Blue Cross, acknowledged to the House Committee on Interstate and Foreign Commerce, on January 24, that "external aid is needed" if his organization is to continue providing hospital insurance for the aged at rates which the minimally-solvent ones of them can pay.

Mr. McNerney suggested a service-benefit, fixed-price contract, with the government reimbursing the carrier (Blue Cross) for the cost of claims and administration. Thus, H.E.W. funds would pass through Blue Cross to the hospitals, and since federal control follows federal money, the government would control the hospitals, and through the hospitals it would control the doctors.

Since Blue Shield is tied to Blue Cross, if Blue Cross goes to the federal trough, it will be difficult to prevent Blue Shield from following the leader. Perhaps we can still accomplish it through prompt and effective measures to correct over or under hospital utilization and, possibly, through increased patient participation in health-care costs

through deductible and/or co-insurance features.

On March 21, at its annual convention in Atlantic City, the United Auto Workers decided to promote union-sponsored group medical programs in major cities where it has a sizable membership. Three or four Iowa cities contain several thousands each of UAW members and their dependents, and those places doubtless are on the list. If this proposal contemplates closed panel practice, or the employment of physicians by hospitals, then H. F. 21 of Iowa law, the result of the doctor-hospital court test, would prevent the immediate establishment of such a plan or program in Iowa.

This move by the UAW must have startled the physicians and hospital officials who are involved in the Michigan Blue Cross and Blue Shield plans, since for years they have attempted to appease Walter Reuther by constantly increasing benefit levels, especially full-service in Blue Shield. Now they find that they cannot provide quite enough to satisfy the appetites of the labor leaders.

SUMMARY

As I have said, we have won consistently in our battles against the forces that would deprive us of the right to practice medicine as the needs of our various patients require, but we have been engaged in no more than a holding action. I am not exaggerating a bit when I tell you that, right now, the first skirmish we lose is likely to spell our doom!

We must gather our allies around us, and we must ingratiate the groups that have been lukewarm toward us. Those who are dedicated to destroying our professional freedoms are attempting to create the impression that organized medicine does not speak for the individual physician. So, above all, we must close ranks and speak with one voice—the voice of organized medicine.

Primary Medical Education in a Summer School Program

WALTER M. BLOCK, M.D.
JERALD GREENBLATT, M.D.
PERCY HARRIS, M.D.
DONALD BOMKAMP, M.D., and
ANTHONY DEEB, M.E.
Cedar Rapids

THERE IS NO BETTER time to engender interest in medicine in the minds of the coming generation than between the ages of twelve and eighteen years. There is no better medium for the stimulation of this interest than an enrichment program initiated by the medical profession and supervised by the school system.

Summer school programs, sponsored by boards of education, are on the rise throughout all parts of the country. These courses are now designed for all categories of students. An enrichment program offers courses beyond the usual curriculm, without credit, and for interest alone.

We believe it imperative that medicine avail itself of these opportunities.

PURPOSE

Two medical courses were offered in the summer school program. The purpose of these two courses was to broaden the scope of the enrichment program, to stimulate interest in medicine, to acquaint students with the advantages and disadvantages of a medical career, and to indicate how these careers may be financed. Not the least of the benefits to accrue is the enhancement of medical prestige within one's community at a time when medicine is often on the defensive.

METHOD

Courses in medicine have now been a part of our summer school curriculum for three years. Two courses are offered. The first, entitled "An Introduction to Medicine," is available to children who have just completed seventh and eighth grades. This course comprises a review of all the systems of the body. The second, entitled "Careers in Medicine," is available to students who have completed tenth and eleventh grades. This course comprises a series of discussions by 27 practitioners in the various medical specialties, as well as general practice, nursing arts, and associated medical modalities. Both courses are open to all children of the appropriate grade categories, regardless of scholastic standing. All students are chosen for these courses by their school counselors.

The physicians are members of the Linn County Medical Society, and of the medical staffs at Mercy and St. Luke's Methodist Hospitals, in Cedar Rapids. Mr. Deeb is chairman of the summer school curriculum for the Cedar Rapids Board of Education. This program was described by Dr. Block at the Fall Conference for County Medical Society Officers, in Des Moines, in October, 1962, and it was discussed in an editorial in the February 11, 1964, issue of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The courses are taught by 22 active physicians, one of the professors from the State University's Medical School, a laboratory technician, a hospital superintendent, a senior medical student, an interne, and a medical management consultant. Classes are held in classrooms at our two hospitals. Each course totals 34 hours, and classes are held 1½ hours daily, five days weekly, for 6½ weeks. Classes are limited to 40 students. The material consists not only of discussions, but also films, film strips, demonstrations with charts and models, demonstrations of instruments and equipment, and visits to laboratories. All films are obtained, on loan, from the film libraries of the State University of Iowa, and the American Medical Association.

In detail, the courses are as follows:

COURSE I. INTRODUCTORY MEDICINE

Lecture 1. What Is a Doctor?
- Education required
- Finances required
- Grades and current preparation
- Allied Sciences (Nursing, medical technology, etc.)
- Film: "Project HOPE"

Lecture 2. History of Medicine
- Medicine through the ages
- Iowa Film: "Learning About Our Bodies"—U3743

Lecture 3. Heredity and Environment (Genetics)
- AMA Film: "Human Heredity"—No. 145

Lecture 4, 5. The Body and How It Works
- Cells and cell structure
- Tissues, glands, systems
- Membranes and cell function

Lecture 6, 7. Bones and Joints
- Bone tissue
- The skeleton: Spine, pelvic and shoulder girdles, individual bones
- Joints, ligaments and cartilage
- Bone diseases
- Iowa Film: "The Human Body: Skeleton"—U3747

Lecture 8. Muscles
- Muscle tissue and nerve-muscle relationship
- Tendons
- Muscle actions
- Individual muscles
- Muscle disease, sprains and strains

Lecture 9, 10, 11. Blood
- Composition
- Functions
- Manufacture and destruction
- Diseases
- Typing and Rh
- Iowa Film: "Work of the Blood"—U4682

Lecture 12, 13. Heart
- Location
- Structure (Gross and microscopic)
- Work of the heart (How and how much)
- Heart sounds and murmurs (How we study the heart)
- Heart disease
- Iowa Film: "Heart and Circulation"—U462

Lecture 14, 15. Blood Vessels and Blood Circulation
- Types of vessels
- Structure of arteries, veins, capillaries
- Closed circulation
- Names of large arteries and veins
- Pulse and blood pressure
- Diseases of blood vessels
- Hemorrhage and treatment
- Iowa Film: "Human Body: Circulatory System"—U4455

Lecture 16. Lymphatic System
- Structure and location
- Functions
- Diseases

Lecture 17, 18. Lungs and Respiration
- Structures of respiration
- Function of structures
- Diseases
- Cardio-respiratory system
- Iowa Film: "Healthy Lungs"—U3328

Lecture 19, 20, 21. Digestive System
- What the system does
- Organs of digestion
- Functions of organs of digestion
- Food and its composition
- Accessory organs of digestion:
  - Liver
  - Pancreas
  - Gall Bladder
- Digestive juices and functions
- Diseases of digestive tract
- Iowa Film: "Human Body: Digestive System"
- AMA Film: "Exploring Your Growth"—No. 159

Lecture 22. Skin
- Structure (Gross and microscopic)
- Contents of skin: Hair and nails, sweat glands, sebaceous glands
- Function of skin and contents
- Skin color
- Diseases, burns, healing
- Iowa Film: "Human Body: Skin"—U2405

Lecture 23, 24. Urinary System
- Structures: Kidneys, ureters, bladder
- Function of urinary system
- Body chemistry: Water balance, acid-base balance
- Diseases
- Urine and its composition

Lecture 25, 26. Brain, Spinal Cord, Nerves
- Nervous system and its parts
- Functions of nervous system in general
- Nerves and nerve cells

Brain, its subdivisions and functions
- Speech centers, learning, personality
- Spinal cord location and function and meninges
- Peripheral nerves: Motor, sensory (Pressure, touch, pain)
- Sympathetic nervous system

Lecture 27, 28. Sensory System
- Visual senses—Eye: Structure and Function
- Hearing senses—Ear: Structure and Function
- Taste senses—Tongue: Structure and Function
- Smell senses—Nose: Structure and Function
- Iowa Film: "Our Senses: What They Do for Us"—U4964

Lecture 29, 30, 31. Glands and Hormones
- Definition of glands and hormones
- Location and function of:
  - Pituitary
  - Thyroid
  - Parathyroids
  - Pancreas
  - Adrenals
- Diseases of glands
- AMA Film: "Endocrine Glands"—No. 141

Lecture 32, 33, 34. Disease and Disease Producing Organisms
- What is disease?

Bacteria, parasites, viruses
Tumors
Iowa Film: "How Our Bodies Fight Disease"—U3985
Iowa Film: "Micro-organisms: Harmful Activities"—U5043

COURSE II. CAREERS IN MEDICINE

Lecture 1. Introduction
Purpose of course and orientation
AMA Film: No. 191—"I Am a Doctor."
Lecture 2. Movie: Project HOPE
Lecture 3, 4, 5. Nursing Arts, Education, Administration
Lecture 6. General Practice
Lecture 7. Internal Medicine
Lecture 8. Allergy
Lecture 9. Psychiatry
Lecture 10. An Interne Discusses His Years in a Rotating Interneship
Lecture 11, 12. Hospital Administration—Tour Through Hospital
Lecture 13. Pediatrics
Lecture 14. Urology
Lecture 15. Anesthesia
Lecture 16. General Surgery
Lecture 17. Orthopedics
Lecture 18. Obstetrics and Gynecology
Lecture 19. Ophthalmology
Lecture 20. Orthoptics
Lecture 21. Otolaryngology
Lecture 22. Neurosurgery
Lecture 23. Dermatology
Lecture 24. Radiology
AMA Film: No. 156: "First a Physician."
Lecture 25. Pathology
Lecture 26. Medical Technology
AMA Film: No. 106—"Career: Medical Technologist"
Lecture 27, 28. Rehabilitation and Physical Medicine
(Includes Physical, Occupational and Speech Therapy)
Lecture 29. Life of a Medical Student
(Discussion by a senior Medical Student)
AMA Film: No. 152—Medical Horizons: "Training the Medical Student."
Lecture 30. Professional Management
(The Economic Aspects of Private Practice of Medicine)
Lecture 31. Financing a Medical Education*
(Parents are urged to be present)
Lecture 32. Panel Discussion—Critique
Question and answer period

The purpose of the advanced course was twofold. First, we hoped that the youngsters who took the introductory course would be sufficiently stimulated to participate in the advanced course when in senior high school. Through such re-exposure to the medical sciences, we hoped to reinforce their desire to choose medicine as a career. Secondly, those who missed the elementary course, would get a chance to attend the "Careers in Medicine" course.

The subjects of this advanced course were taught by specialists in their respective fields. Each man discussed the essential features of his specialty, what a day in the life of a specialist is like, and what opportunities are offered by his particular field. For example, the pediatrician discussed how he can help parents with the physical, emotional and mental problems involved in rearing children; he lectured about common diseases in children, and the problems of physically or mentally handicapped youngsters. He described a day in his office or what subspecialties and academic careers are open to practitioners of his specialty. To illustrate their lectures, many doctors used films dealing with various aspects of their field of medicine.**

The tour through the laboratory was given by the technician-in-charge, and included visits to the blood bank, the usual branches such as hematology, chemistry, bacteriology, etc. The technician also demonstrated facilities for doing electrocardiograms, electroencephalograms and radioactive-uptake studies.

RESULTS

It has become the deep conviction of physicians and educators alike, that when courses are offered on a voluntary basis and when motivation is intense, material can be offered in greater depth and at a faster pace than is ordinarily possible.

The success of both courses is best indicated by the fact that applicants for enrollment have exceeded the number that could be accommodated. In the final critiques that all students are asked to write, the courses have been unanimously praised. Most students who finished the introductory course have requested an intermediate course as well.

In its annual report to the School Board, the directors of the Summer School Program have stated that the medical courses were the highlight of the summer curriculum. There has been continuous discussion in the community at large as to the outstanding merit of the medical program. This success has suggested the possibility of expanding the curriculum to include other professions.

SUMMARY

The summer school program now available in many communities offers an ideal means of interesting young students in the field of medicine. We have offered two courses to stimulate this interest, and to acquaint students with both the virtues and the difficulties of a medical career. These courses have been described. The program has been ardently supported by educators, students, and the community at large.

Other medical societies are urged to explore the possibilities of similar programs in their communities.

* We are greatly indebted to Prof. C. E. Radcliffe, Dept. of Dermatology, State Univ. of Iowa, for lecturing on this subject.

** A list of libraries and organizations from which film catalogues can be obtained is available on request.

Scientific Articles

The Diagnosis and Management of Bleeding Disorders

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It is generally agreed that a normal hemostatic mechanism is necessary for survival. The prevention of spontaneous bleeding and the control of traumatic hemorrhage require integration of a number of important mechanisms. The intricate nature of these processes provides many possibilities for the normal hemostatic mechanism to go astray, and any of those possibilities can result in severe and perhaps lethal bleeding. Failure to appreciate and to understand the significance of the problems involved may thus produce unnecessary anguish for both the physician and the patient.

The rapid accumulation of new information about blood coagulation mechanisms and the discovery of new bleeding disorders and blood clotting factors have made it difficult for the practicing physician to keep abreast of recent developments in this field. Nevertheless, he is expected to be familiar with the many hemorrhagic disorders and to manage them effectively. This paper is a survey of the recent literature and a review of our experience at the Blood Coagulation Laboratory of the State University of Iowa Hospitals.

Dr. Hoak is an assistant professor in the Department of Internal Medicine and an advanced-research fellow of the American Heart Association; Dr. Connor is an associate professor in the Department of Internal Medicine; and Dr. Warner is professor and head of the Department of Pathology. From the Blood Coagulation Laboratory, State University of Iowa Hospitals, Iowa City.

Hemostasis depends upon the interaction of plasma coagulation factors with the cellular components of the blood and the vessel wall. These factors operate in response to neural, physical and humoral stimuli to minimize blood loss and maintain continuity of the circulatory system. For example, the patient with familial hemorrhagic telangiectasia (Osler's disease) can exsanguinate despite a normal clotting mechanism because the structure of the blood-vessel wall is defective. Platelets plug vascular defects, promote vasoconstriction and supply a phospholipid necessary for plasma thromboplastin formation. Other factors concerned with endothelial adhesiveness and with the organization and lysis of fibrin clots complete the normal hemostatic arrangement.

It is well established that more than a dozen blood components, in addition to vascular factors, are necessary for effective hemostasis in man. With one possible exception, factor XII, a deficiency of any one component can lead to excessive bleeding. The various coagulation factors are listed in Table 1.

A diagram of the blood clotting mechanism is shown in Figure 1. Activation of factor XII (Hageman) is thought to represent the initial step in the clotting of blood.[1] This, in turn, reacts with factor XI (PTA) to form the activation product. Subsequent reactions are obscure, but involve factors VIII, IX and X, factor V and calcium ions to form plasma thromboplastin. Plasma thromboplastin promotes the conversion of prothrombin to thrombin. Factors V and VIII largely disappear during the normal clotting process, and are not present in stored serum.[2] Factors VII, IX, X, XI, and XII are not consumed, and are usually stable in normal serum.

TABLE I

Factor I	Fibrinogen
Factor II	Prothrombin
Factor III	Thromboplastin
Factor IV	Calcium
Factor V	Accelerator globulin (AcG)
Factor VII	Proconvertin, Serum prothrombin conversion accelerator (SPCA)
Factor VIII	Antihemophilic globulin (AHG)
Factor IX	Christmas factor, plasma thromboplastin component (PTC)
Factor X	Stuart-Prower factor
Factor XI	Plasma thromboplastin antecedent (PTA)
Factor XII	Hageman factor

In the second stage, prothrombin is converted to thrombin. Tissue extracts are thromboplastic, and in the presence of factors V, VII, X, and calcium ions, they also convert prothrombin to thrombin. The enzyme thrombin acts upon fibrinogen to liberate peptides and to form a fibrin intermediate which polymerizes to form a fibrin clot.

Coagulation is a dynamic process that leads to the formation of a solid fibrin clot. There are opposing forces acting to maintain the fluidity of the blood. After the clotting takes place, thrombin disappears rapidly from the blood. Much of it is absorbed by the fibrin clot. In addition, the antithrombin of the plasma neutralizes circulating thrombin. Antithromboplastins rapidly decrease the amount of circulating thromboplastin.[3] In addition, it has been reported that the clotting intermediates which are formed during the first stage of coagulation are removed from the blood by the reticuloendothelial system.[4]

Intravascular thrombi may be dissolved by proteolytic enzymatic activity (Figure 2). The lysis of blood clots is termed "fibrinolysis" and is usually accelerated following sudden severe anoxic episodes, intense exercise, fright, or the use of

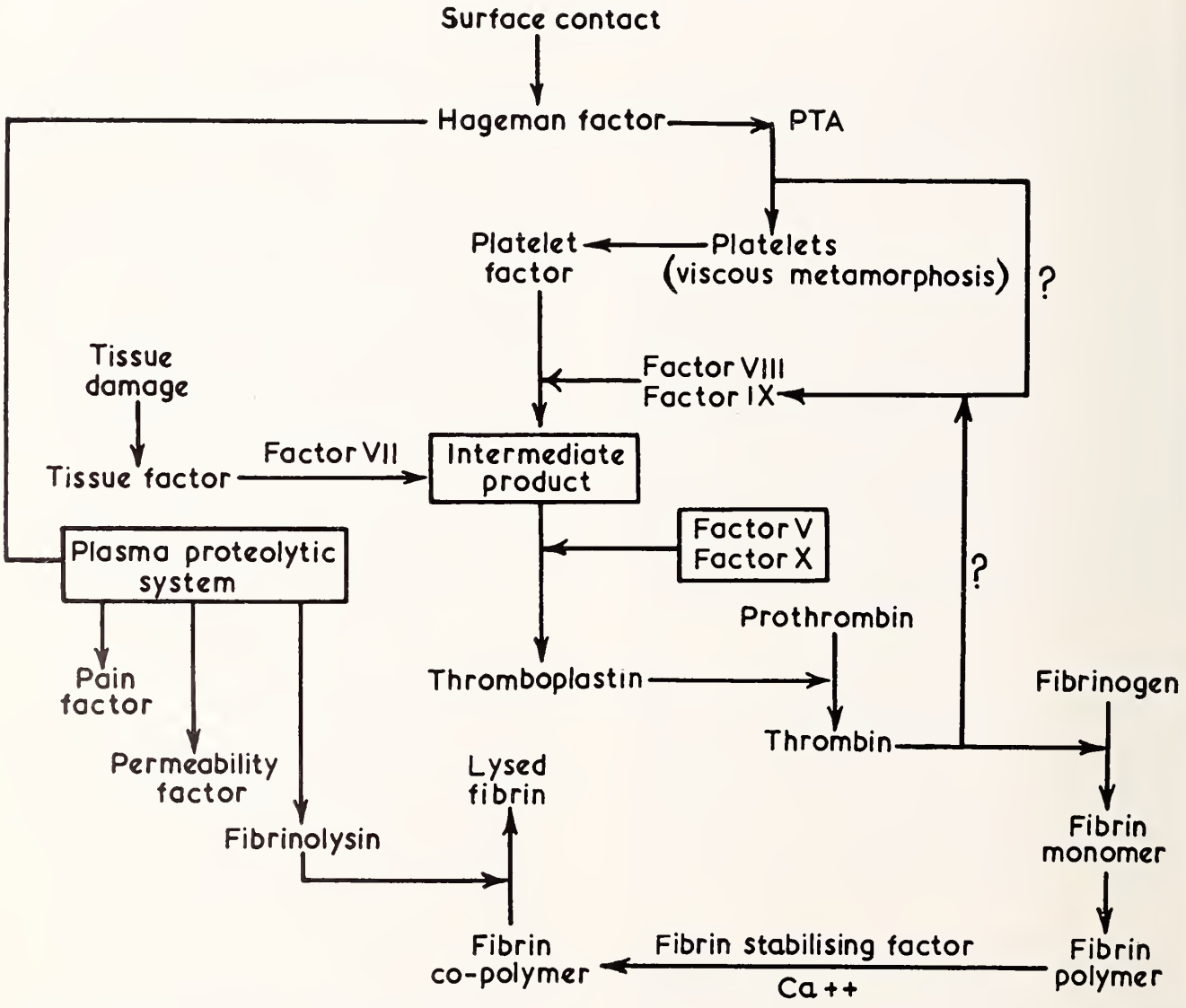


Figure 1. Diagram of the blood-clotting mechanism, reproduced from General Pathology, Third Edition, ed. by Sir Howard Florey. London, Lloyd-Luke, Ltd., 1962.

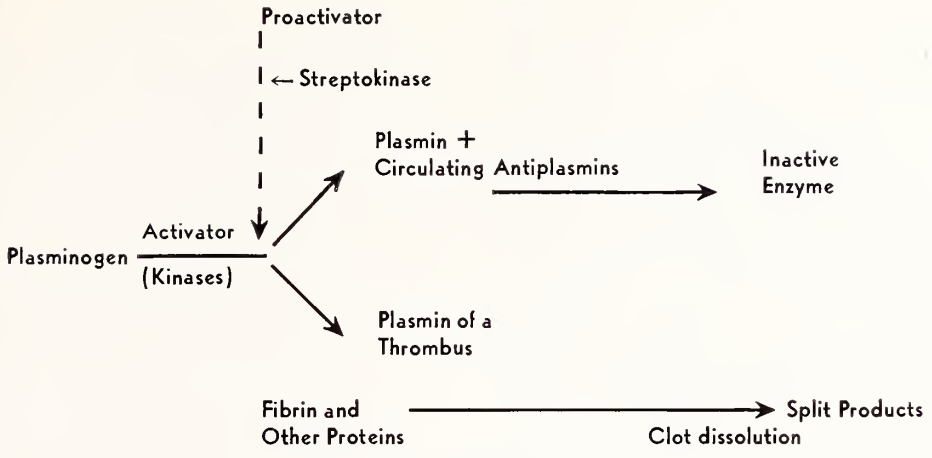


Figure 2. The Fibrinolytic System.

certain drugs such as epinephrine or nicotinic acid. Plasminogen, the inactive form of the fibrinolytic enzyme, is normally present in the plasma. Various tissue-activator substances will activate plasminogen to form the active enzyme plasmin. Plasmin, in the free state, will act upon many proteins, including clotting factors such as fibrin, fibrinogen, factor V, and factor VIII. Circulating plasmin is bound rapidly by the antiplasmin in the plasma. Although this fibrinolytic system usually functions in a homeostatic manner, under certain pathologic conditions it can become disorganized, and a severe hemorrhagic disorder may result.

DIAGNOSIS OF BLEEDING DISORDERS

The evaluation of a bleeding patient demands the taking of a careful history. It should be emphasized that a bleeding disease may be present, even though normal results have been obtained with the laboratory tests now available. That is not to say that blood-clotting tests are useless, but rather that one must recognize their limitations and remember that they are only an aid to diagnosis. The following sequence may be helpful in the diagnosis of a hemorrhagic disease:

First step: to determine the past or present existence of bleeding.

1. History of bleeding
   a. Familial
   b. In spontaneous episodes
   c. During or after operative procedures and trauma
2. Physical examination
   a. Skin
   b. Mucous membranes
   c. Retina
   d. Joints
   e. Teeth
3. Presence of a concurrent disease known to cause secondary bleeding (e.g., leukemia, liver disease, carcinoma of the prostate)
4. History of drugs taken (e.g., anticoagulants)
5. Diet (e.g., deficiency of vitamin K or of vitamin C)
6. Initial laboratory studies: urine, stool and blood count.

Clinical examination usually provides a satisfactory appraisal of hemostatic activity. Blood-clotting tests are then useful to elucidate the nature and severity of a clotting defect. These, of course, may not reflect other defects in the hemostatic mechanism when the abnormality lies in the structure of the vessel. Also, there are a few patients with mild forms of clotting disorders (e.g., hemophilia) who are not suspected of having defective hemostasis until they bleed excessively following minor trauma or an operation. Laboratory tests may reveal the abnormality in these instances. In this connection, it should be remembered that approximately 50 per cent of patients with classical hemophilia have normal whole-blood clotting times.

CLOTTING TESTS AND WHAT THEY MEASURE

The interpretation of clotting-test results requires a knowledge of what they measure and how they are performed.

Whole-blood clotting time (glass).[5] This test provides a crude measurement of the combined action of all the clotting factors, any one of which may be reduced considerably without affecting the clotting time. Normal: 5-12 minutes.

Whole-blood clotting time (silicone).[6] When silicone-coated glass tubes or plastic (Lusteroid) tubes are used, the whole-blood clotting time of normal blood is from four to five times longer than in ordinary glass tubes. The silicone clotting time becomes greatly prolonged in patients in whom plasma thromboplastin formation is impaired, even though the defect is mild. Normal: 24-45 minutes.

Platelet count.[7]

Clot retraction.[8] This may be abnormal in patients with thrombocytopenia or platelet dysfunction.

Bleeding time.[9] This is dependent upon vascular factors and platelets.

Arm-band test[10] (Rumpel-Leede). The arm-band test measures capillary fragility and platelets.

Fibrinogen determination.[11] This is a chemical analysis or bedside method,[12] using thrombin.

Fibrinolysis. This involves observation of the clot after blood or plasma has clotted in a glass tube. Many more specialized assays have been developed.

"Prothrombin" time (one stage).[13] Oxalated plasma, rabbit brain extract and calcium are added together. Prothrombin time reflects the interaction of prothrombin, factor V, factor VII, factor X and fibrinogen.

Prothrombin concentration (two stage).[14] This test provides a quantitative measurement of prothrombin. It indicates only the prothrombin level, and is not influenced by deficiencies of other clotting factors.

Thrombin time.[15] One adds thrombin to the patient's plasma. Thrombin time is prolonged in hypofibrinogenemia or in the presence of some types of circulating anticoagulants.

Clotting time of recalcified plasma.[16] Calcium is added to citrated or oxalated plasma.

Quantitative determination of factors V and VII (accelerators).[17]

Prothrombin consumption or utilization test.[16] The efficiency of clotting depends upon the complete conversion of prothrombin to thrombin. In this test, the prothrombin remaining in the serum of clotted blood after a period of incubation is compared with the prothrombin present in the plasma before clotting.

Thromboplastin generation test.[16] This provides a sensitive and practical method for detecting deficiencies of factors VIII, IX, X, XI and XII.

Partial thromboplastin time.[18, 19] This is used as a test for hemophiloid disorders, and is performed by adding calcium and phospholipid (to supply platelet factor 3) to the patient's oxalated plasma. It does not provide any indication of deficiencies in platelet number or function, or in factor VII, and may not be an accurate indicator of circulating anticoagulants of the heparin type.

CAUSES OF ABNORMALITIES IN SPECIFIC COAGULATION TESTS

1. Prolonged whole-blood clotting time
   a. Hemophilia (factor VIII deficiency)
   b. Factor-IX deficiency
   c. Factor-X deficiency
   d. Factor-XI deficiency (PTA)
   e. Factor-XII deficiency (Hageman)
   f. Afibrinogenemia or hypofibrinogenemia
   g. "Hypoprothrombinemia" associated with a prolonged prothrombin time, and deficiencies of prothrombin and factors VII, IX or X (prothrombin less than 10 per cent)
   h. Circulating anticoagulants—heparin or antifactors VIII, anti-IX, etc.
2. Elevated prothrombin time (one-stage)
   a. Factor V deficiency
   b. Pure prothrombin deficiency
   c. Factor VII deficiency
   d. Factor X deficiency
   e. Circulating anticoagulant
   f. Fibrinogen less than 100 mg. per cent
3. Prolonged bleeding time
   a. Thrombocytopenia (lack of platelets) or interference with platelet function
   b. Thrombasthenia (abnormal platelets)
   c. Vascular hemophilia (von Willebrand's disease)
   d. Reduced fibrinogen or "fibrinolytic syndrome"
   e. Severe instances of deficiencies listed under 1 and 2 (rarely)
4. Positive arm-band test (Rumpel-Leede)
   a. Thrombocytopenia
   b. Thrombasthenia (abnormal platelets)
   c. Purpuras due to capillary abnormalities
   d. Scurvy
5. Poor clot retraction
   a. Thrombocytopenia
   b. Thrombasthenia
6. Abnormal prothrombin consumption
   a. Deficiency of coagulation factors active in Stage I (platelet lipid factor, factors V, VIII, IX, X, XI and XII)
   b. Circulating anticoagulants
7. Abnormal thromboplastin generation and partial thromboplastin time tests
   a. Deficiency of coagulation factors V, VIII, IX, X, XI and XII
   b. Circulating anticoagulants

SPECIFIC BLEEDING DISORDERS

Except for fibrinogen, the plasma clotting factors are associated with the alpha and beta globulins, and are present in amounts of a few milligrams or less per 100 ml. of blood. Because several clotting factors are produced by the liver, its diseases may cause a disturbance in the hemostatic mechanism. Deficiency of a clotting factor may be congenital or acquired.

1. *Classical hemophilia (factor VIII deficiency).* Factor VIII is essential for the formation of plasma thromboplastin. It is a labile material present in fresh blood, and can be preserved for several weeks in citrated plasma at pH 7.1 stored at –20°C., or in the lyophilized form, but it disappears rapidly at refrigerator temperature (4°C.).

Classical hemophilia is the commonest hereditary hemorrhagic disease. Although there are cyclic variations in the intensity of bleeding symptoms and in laboratory test results, hemophiliacs may be grouped into severe, moderate and mild cases. In general, the severity of the coagulation defect, as measured by laboratory tests, correlates reasonably well with the frequency and severity of bleeding. Severe hemophiliacs have no detectable factor-VIII activity in the plasma; moderately

severe patients have between 1 and 5 per cent factor-VIII activity; and higher factor-VIII concentrations (up to 60 per cent) are found in mildly affected patients, some of whom may show no excessive bleeding unless subjected to injury, tooth extraction or surgery. If the plasma factor-VIII level is 1 per cent of normal, the whole-blood clotting time in glass may be normal. Even the thromboplastin generation test may be normal if the factor-VIII level is 10 per cent of normal.[20]

The history of excessive bleeding during infancy or childhood, particularly hemarthroses and deep-tissue hemorrhages without purpura, suggests this coagulation defect. The history of a defect which has been transmitted by females and limited to males suggests hemophilia, or Christmas disease (factor IX deficiency) which has a similar clinical picture. The absence of a familial bleeding tendency does not exclude a hereditary disease, however, since 30 to 50 per cent of patients with hemophilia or Christmas disease have no histories of a familial disorder.

The problem with the female carrier of hemophilia is interesting. Some women who are carriers bleed excessively after injury, operations and childbirth, and are discovered to have decreased factor-VIII levels.[20, 21] Classical hemophilia has been reported in a female whose mother is a carrier and whose father has the disease.[22] It has also been reported in a "girl" with a male sex-chromatin pattern.[23]

Case 1. Elderly man with mild classical hemophilia. A 71-year-old man exemplified the mild form of hemophilia which is compatible with longevity. He gave a history of excessive bleeding following minor injuries since the age of 20. Recurrent gastrointestinal and urinary tract bleeding were common problems. A male cousin had died of bleeding following a minor surgical procedure.

Clotting time (glass): 10 min. 30 sec. (Normal 5-14 min.)
*Clotting time (silicone): 150 min. (Normal: 25-45 min.)
One-stage prothrombin time: 14.2 sec. (Control: 14 sec.)
Prothrombin consumption at 30 minutes—27 per cent remained in serum (Normal: 30 per cent or less)
*Thromboplastin generation test—54 per cent (Normal: 100 per cent)

The defective thromboplastin generation was corrected by the addition of normal barium sulfate absorbed plasma to the incubation mixture. Correction was not provided by the addition of normal serum or plasma from a patient with classical hemophilia, since neither could provide factor VIII.

Treatment of classical hemophilia. Many agents have been recommended for the treatment of hemophilia, but the only technics that have proved effective are transfusions of fresh blood, plasma, frozen fresh plasma or factor-VIII concentrates. If the patient is anemic, we use fresh whole blood. When hemoglobin levels are normal, we give frozen fresh plasma or fresh plasma. Before or after tooth extraction, fresh plasma or frozen fresh plasma are usually satisfactory. For hemophiliacs who sustain serious trauma and blood loss, or who must undergo surgery, effective management may require treatment with concentrates of factor VIII from human or animal plasma. Pig and beef plasmas have much higher factor-VIII activities than has that of man, but each can be used only for a single 7- to 10-day period because of allergic complications.[24, 25] No animal factor-VIII concentrations are available, at present, in the United States. Recently, a fraction of human plasma has been found effective for those patients who must undergo operation.[26]

2. *von Willebrand's disease (vascular hemophilia).* Although patients with classical hemophilia have normal bleeding times, there are some patients with low factor-VIII levels and prolonged bleeding times. Their disorder, like hemophilia, is familial, but unlike hemophilia it affects the two sexes equally. Fresh blood and plasma correct the factor-VIII deficiency and shorten the prolonged bleeding time. Recently it has been shown that transfusion of plasma from a patient with classical hemophilia (factor-VIII deficiency) into a patient with von Willebrand's disease causes a large increase in the recipient's plasma factor-VIII level. A similar effect does not occur when plasma from a von Willebrand's disease victim is given to a hemophiliac patient.[27] The underlying mechanism responsible for this interesting phenomenon is unknown at present.

Case 2. College student with von Willebrand's disease. A 21-year-old female student was admitted because of prolonged and excessive bleeding following recent dental extractions. She gave no history of a bleeding tendency, and denied a familial history of bleeding. Subsequently it was reported that her maternal uncle had a type of hemophilia. This was an instance where an individual had a mild hemophiliod disorder and did not exhibit excessive bleeding until subjected to a minor surgical procedure.

Bleeding time—over 10 min.
Platelet count—normal
Clotting time (glass)—11 min. 25 sec. (Normal: 5-14 min.)
*Clotting time (silicone)—106 min. (Normal: 25-45 min.)
One-stage prothrombin time—14.6 sec. (Control: 14 sec.)
Prothrombin consumption 30 min.—2 per cent. (Normal: 30 per cent or less) 60 min.—0 per cent. (Normal: 20 per cent or less)
*Thromboplastin generation—70 per cent (Normal: 100 per cent)

* Abnormal test result.

Correction studies showed a deficiency of factor VIII.

3. *Christmas disease (factor IX deficiency).* Clinically and genetically, Christmas disease is similar to classical hemophilia. Laboratory tests, however, clearly differentiate the two conditions. Factor IX is present in normal serum, as well as plasma. Female carriers of Christmas disease have been shown to have reduced factor-IX activity.[28] The disease has also been reported in women.[29]

Case 3. Typical case of Christmas disease. A 19-year-old man gave a history of excessive bleeding during most of his life. Frequent spontaneous hemarthroses and episodes of subcutaneous bleeding had been noted. There were no other members of his family with a hemorrhagic disorder.

*Clotting time (glass)—24 min. (Normal: 5-14 min.)
One-stage prothrombin time—14.2 sec. (Control: 14 sec.)
*Prothrombin consumption 30 min.—89 per cent (Normal: 30 per cent or less) 60 min.—78 per cent (Normal: 20 per cent or less)
*Thromboplastin generation—0 per cent (Normal: 100 per cent)

The defect in thromboplastin generation was corrected by the addition of normal serum to the incubation mixture. It was not corrected by the addition of normal barium sulfate absorbed plasma or serum from a patient known to have Christmas disease.

Treatment. In contrast to the coagulation defect in classical hemophilia, the one in Christmas disease can usually be corrected temporarily by a transfusion of stored blood or plasma. The half-life of factor IX after injection into a patient has been reported as 30 hours.[30] Since stored blood may contain variable levels of factor IX, we use the freshest plasma available in the blood bank for transfusion of patients who are not anemic. Recently, Biggs *et al.* have reported the successful use of a potent factor-IX concentrate prepared from human plasma for the treatment of patients with Christmas disease who must undergo operations.[31]

4. *Congenital deficiencies of factors V, VII and X.* These disorders are relatively rare. All of the patients will have prolonged one-stage prothrombin times. In patients with factor-VII and -X deficiencies, the defective prothrombin times can be corrected by the addition of normal serum to the patient's plasma. This cannot correct the abnormal one-stage prothrombin time due to factor-V deficiency. Here the defect can be corrected by the addition of fresh barium sulfate absorbed plasma. Barium sulfate removes factors VII and X, but not factor V. Thromboplastin generation is defective in patients with factor-V and factor-X deficiencies, but is thought not to be defective in pure factor VII-deficient patients. Stored blood or plasma is satisfactory treatment for patients with factor-VII or -X defects, but patients with factor-V deficiencies should be given fresh blood or plasma.

5. *Factor XI (PTA) deficiency.* Factor XI, present in plasma and serum, is stable during storage. The congenital deficiency has been observed in both sexes, it is rare, and it usually results in mild hemorrhagic disorders. Exceptions have been reported where a serious bleeding disorder existed.[32]

6. *Factor XII (Hageman factor).* Most patients with factor-XII deficiency have not exhibited spontaneous bleeding or excessive blood loss at operation. These patients have prolonged whole-blood clotting times in glass. This interesting disorder has been reviewed by Ratnoff.[33]

7. *Platelets.* Hemorrhage may result from either a deficiency of platelets (thrombocytopenia), when the platelet count is below 50,000/cu. mm., or when the platelet count is very high (thrombocythemia), where the platelets may exceed 1,000,000/cu. mm. In patients with thrombocythemia, bleeding may occur because the excess platelets and their phospholipid interfere with clotting. Two excellent reviews have been written about this subject.[34, 35]

A hemorrhagic condition may also be seen in conditions where the platelets are normal in number, but defective in function (thrombasthenia). Patients with uremia frequently exhibit platelet dysfunction.[36] Similar observations have been made in patients with macroglobulinemia.[37]

Case 4. Young woman with thrombasthenia. A 21-year-old practical nurse had excessive bleeding following minor wounds and surgery. Easy bruising had been a chronic complaint.

Platelet count—190,000/cu. mm.
*Bleeding time—3 min. 37 sec. (Normal: 1½-3 min.)
Clot retraction—1 hr. 20 min.
One-stage prothrombin time—14 sec. (Control: 14.8 sec.)
Thromboplastin generation—100 per cent
*Prothrombin consumption 30 min.—60 per cent (Normal: 30 per cent or less) 60 min.—38 per cent (Normal: 20 per cent or less)

The abnormal prothrombin consumption could be corrected by the addition of soybean phospholipid. Similarly, freezing and thawing of the patient's platelets caused them to function normally when they were used in the prothrombin consumption test. It appeared that the platelets in this case were unable to release the phospholipid that is needed for thromboplastin formation.

Case 5. Platelet dysfunction in a patient with uremia. A 64-year-old man was known to have metastatic carcinoma from the prostate with ureteral obstruction and uremia. Epistaxis, ecchymoses and gastrointestinal bleeding were observed.

Blood urea nitrogen—110; creatinine—12.3
Platelet count—160,000/cu. mm.

* Abnormal test result.

Bleeding time—1 min. 10 sec.
Clot retraction—2½ hrs.
Clotting time (glass)—11 min. 20 sec. (Normal: 5-14 min.)
*Clotting time (silicone)—80 min. (Normal: 25-45 min.)
One-stage prothrombin—15.4 sec. (Control: 14.4 sec.)
*Prothrombin consumption test 30 min.—72 per cent (Normal: 30 per cent or less) 60 min.—32 per cent (Normal: 20 per cent or less)

Case 6. Typical clotting studies of a patient with thrombocytopenia. A 73-year-old man was admitted for evaluation of epistaxis and purpura. The arm-band test (Rumpel-Leede) was positive.

*Platelet count—20,000/cu. mm.
*Bleeding time—over 6 min.
Clotting time (glass)—8 min. (Normal: 5-14 min.)
*Clotting time (silicone)—100 min. (Normal: 25-45 min.)
*Clot retraction—none after 24 hours
*Prothrombin consumption 30 min.—74 per cent (Normal: 30 per cent or less) 60 min.—36 per cent (Normal: 20 per cent or less)
Thromboplastin generation—98 per cent

Only transfusion of fresh intact platelets increases the number of circulating platelets and has a hemostatic effect.[38] Lyophilized platelets appear to be of little or no value.[39] Platelets should be transfused in the shortest possible time after the blood has been collected, and with the least amount of handling. In platelet transfusions for thrombocytopenic patients, success in maintaining a certain platelet level is extremely variable. The reported life-time of perfused platelets is from one to seven days, and varies with the etiology of the thrombocytopenia.[40]

8. *Circulating anticoagulants.* Acquired hemorrhagic conditions caused by circulating anticoagulants may be seen following pregnancy, or with systemic lupus erythematosus or other chronic diseases,[41] and they have been reported in a few previously healthy elderly patients. Steroid therapy has been helpful in some instances, and blood and plasma transfusions usually provide temporary improvement.

Case 7. Circulating anticoagulant in a patient with a complex neurologic disorder. A 65-year-old lady was admitted for evaluation of visual loss and paraplegia. Petechiae, ecchymoses and gastrointestinal bleeding had been observed. A lupus erythematosus preparation was negative. Improvement in her bleeding problem was noted following the institution of steroid therapy. In this circumstance, the anticoagulant interferes with many of the tests. The crucial result that indicates the presence of a circulating anticoagulant is a marked prolongation of the clotting time when the patient's plasma is added to normal plasma.
Bleeding time—1 min. 10 sec.
Platelet count—220,000/cu. mm.
*Clotting time (glass)—23 min. (Normal: 5-14 min.)
*Recalcified clotting time—6 min. 25 sec. (Normal: 1½-2¾ min.)
*One-stage prothrombin time—20.2 sec. (Control: 13.8 sec.)
*Two-stage prothrombin—68 per cent (Normal: 100 per cent)
*Accelerator activity—63 per cent (Normal: 100 per cent)
*Prothrombin consumption 30 min.—86 per cent remaining in serum (Normal: 30 per cent or less) 60 min.—33 per cent (Normal: 20 per cent or less)
Control plasma clotting time—1 min. 43 sec.
*(½ patient's plasma plus ½ control plasma)—4 min. 22 sec.

9. *Fibrin stabilizing factor.* The clot formed from normal plasma is insoluble in 5-molar urea solution, but fibrin prepared from purified fibrinogen and thrombin is soluble.[42] The stability of the plasma clot in urea solution has been attributed to the action of a globulin which is found in normal plasma and serum, and which has been called the fibrin stabilizing factor.[43-45]

A congenital hemorrhagic disorder associated with impaired wound healing has been reported in several members of a family who lacked fibrin-stabilizing factor activity.[46] Hemorrhagic episodes generally occur only after trauma. The hemostatic mechanism appears to function normally at first, but severe bleeding appears 24 to 36 hours after the injury. Clotting studies are normal, with the exception of the thrombelastogram. Blood clots from patients with the deficiency are soluble in 5-molar urea. Blood or plasma transfusions are effective, and preliminary studies suggest that the half-life of fibrin stabilizing factor is approximately three days.[46]

10. *Vitamin K deficiency.* There are several conditions in which similar coagulation defects are found. These are listed in Table 2. All are as-

* Abnormal test result.

TABLE 2

Condition	Vitamin K Defect	Treatment
Newborn	Deficiency	K_1
Biliary obstruction	Decreased intestinal absorption	Parenteral K_1 or K
Malabsorption syndrome	Decreased intestinal absorption	Parenteral K_1 or K
Oral anticoagulants	Metabolic block	K_1
Antibiotics or sulfa	Decreased production by gut bacteria	K_1 or K
Cirrhosis	Diseased liver cells unresponsive	K-S (II)

sociated with impaired liver function or altered vitamin-K metabolism. These patients may demonstrate isolated or combined deficiencies of prothrombin, factor VII, factor IX or factor X. In the absence of liver disease, correction of the clotting defects in response to parenteral vitamin-K_1 therapy usually occurs within 48 hours.

Prophylaxis of hemorrhagic disease of the newborn. Evidence suggests that hemorrhagic disease of the newborn occurs often enough in certain groups (once in every 200-1,000 births) to warrant the use of prophylactic vitamin K. An adequate dosage is 1 mg. of vitamin K daily, for the first few days of life. The drug may be given in the formula, subcutaneously or intramuscularly, as an aqueous colloidal preparation of vitamin K_1 (Aqua-mephyton®, Konakion®). Synthetic water-soluble vitamin-K preparations (Synkayvite®, Hykinone®) have been reported to cause hemolytic anemia, hyperbilirubinemia, kernicterus and death of premature and full-term infants, when excessive dosages have been utilized.[47] Small and equally effective doses (1 to 2 mg./day to the newborn) have not been shown to be dangerous. However, no toxic effects have been reported with vitamin K_1, and it would appear to be the choice for infants. Intravenous vitamin K_1 in a dosage of 1 to 2 mg. per day should be given for several days. The use of fresh blood or plasma should be used in the more severe cases. Newborn infants of mothers recently treated with coumarin drugs may require larger doses of vitamin K_1.

Case 8. Infant with hemorrhagic disease of the newborn. A 3,415 Gm. male infant was born on 4/13/'60 and appeared healthy. On 4/14, a cephalohematoma was noted in the left parietal area, and bleeding had not stopped from the circumcision. Vitamin K_1, 1 mg. intramuscularly, was given on 4/15, and the circumcision was resutured and topical thrombin applied. No further bleeding was noted on 4/16 or thereafter.

4/15 Hemoglobin—14.7 Gm.
Platelet count—84,000/cu. mm.
Bleeding time—3 min.
*One-stage prothrombin time—57 sec. (Control: 13.1 sec.)
*Clotting time (glass) 27 min. (Normal: 5-14 min.)

4/16 One-stage prothrombin time—14.8 sec. (Control: 13.1 sec.)

Case 9. Patient with a bleeding disorder caused by an acquired vitamin-K deficiency. A 62-year-old man was admitted for evaluation of possible intestinal obstruction. He had been treated with antibiotics and intravenous fluids for one week before his admission to University Hospitals. His nutritional state was poor. Ecchymoses were noted on his arms. He exemplified the patient with multiple coagulation defects due to a vitamin-K deficiency. The rapid response which occurred following the parenteral administration of vitamin K_1 was characteristic of a patient with a vitamin-K deficiency and normal liver function. Twenty milligrams of vitamin K_1 was given intravenously on 5/23.

	5/23	5/25	6/2
Clotting time (glass)	9 min.	5 min. 35 sec.	6 min.
Clotting time (silicone)	3 hrs.	51 min.	21 min.
One-stage prothrombin	35.4 sec.	17.6 sec.	15.3 sec.
Two-stage prothrombin	49%	70%	91%
Accelerator activity (factor VII deficiency)	54%	81%	92%
Thromboplastin generation	0%	0%	103%

The defect in thromboplastin generation was corrected by the addition of normal serum or factor IX-deficient serum to the incubation mixture. It was not corrected by the addition of normal barium sulfate absorbed plasma. These results suggest that defective thromboplastin generation had resulted from a factor X deficiency.

11. *Coagulation defects in patients with liver disease.* The development of a bleeding disorder is a common complication in patients with severe liver disease. Since most coagulation factors are produced in the liver, defects in its structure and function may cause a disturbance of the hemostatic mechanism. A list of the coagulation deficiencies seen in patients with liver disease can be found in Table 3.

TABLE 3

COAGULATION DEFECTS IN PATIENTS WITH LIVER DISEASE

Prothrombin
Factor V
Factor VII
Factor IX (PTC)
Factor X
Factor XI (PTA)
Fibrinogen—rare
Thrombocytopenia
Increased fibrinolytic activity
"Labile Thrombin"[48]

Previously, there has been little to offer the patient with coagulation defects secondary to liver disease, other than transfusions of blood or plasma. Usually, analogues of vitamin K are ineffective unless there is an element of biliary obstruction, and in some instances they may be toxic. In fact, the failure of the prothrombin time to improve after vitamin-K therapy has been used as a sign of hepatocellular disease.[49] Recently, we have found that vitamin K-S (II),* previously described

* Abnormal test result.

* Now available from Nutritional Biochemical Corporation, Cleveland.

by Carter and Warner,[50] is effective in correcting accelerator deficiencies (factors V and VII) in some patients with liver disease.[51] Although prothrombin levels do not improve, the increase in accelerator activity compensates partially for the prothrombin deficiency. In several instances, the use of K-S (II) has permitted liver biopsy, dental extractions and major operations. These procedures would have been hazardous with the low accelerator levels that existed before treatment.

12. *Hypofibrinogenemia, or the fibrinolytic syndrome.* Certain clinical conditions are associated with a catastrophic bleeding disorder that is complex in etiology and may involve uncontrolled fibrinolytic activity. It has been seen in patients with carcinoma of the prostate, other carcinomas, placenta abruptio, retained dead fetus, or amniotic fluid embolism, and in a few patients with giant hemangiomata of the liver.[52] A list of the possible mechanisms involved with this syndrome can be found in Table 4.

TABLE 4

MECHANISMS OF HEMORRHAGE IN FIBRINOLYTIC SYNDROME

1. Release of thromboplastic substances into the circulation with intravascular clotting and depletion of clotting factors.
2. Activation of fibrinolytic mechanism without usual control by normal inhibitory mechanism.
3. Action of plasmin on fibrinogen to form products which inhibit normal clot formation by impairment of fibrin polymerization.
4. Aggravation of hemorrhagic disorder by transfusion of stored blood with resultant thrombocytopenia and deficiencies of labile clotting factors.

Case 10. Fibrinolytic syndrome associated with carcinoma of the prostate. A 72-year-old man with known metastatic carcinoma from the prostate was admitted for evaluation and treatment of generalized bleeding. Hematuria, epistaxis and many ecchymoses were noted. Following the intravenous use of epsilon aminocaproic acid and fresh whole-blood transfusions, he made a recovery from his bleeding disorder and lived several months before dying from renal failure. This case illustrates the complexity of this syndrome, and emphasizes that it is a disorder characterized by multiple coagulation defects.

*Bleeding time—over 10 min.
*Platelet count—78,000/cu. mm.
Clotting time (glass)—12 min. 20 sec. (Normal: 5-14 min.)
*One-stage prothrombin time—21 sec. (Control: 14.6 sec.)
*Two-stage prothrombin—46 per cent (Normal: 100 per cent)
*Accelerator activity (factor-VII deficiency)—48 per cent (Normal: 100 per cent)
*Fibrinogen—106 mg. per cent (Normal: 250-300 mg. per cent)
*Fibrinolysis—100 per cent after one hour
*Prothrombin consumption 30 min.—46 per cent (Normal: 30 per cent or less) 60 min.—39 per cent (Normal: 20 per cent or less)

When one approaches the therapy of the fibrinolytic syndrome he should realize that it is the most serious of all the hemorrhagic diseases. It is characterized by multiple clotting-factor deficiencies, and not just by hypofibrinogenemia. Recent studies suggest that the main defect may be an impaired fibrin polymerization because of the action of plasmin on fibrinogen.[53]

First, it is essential to make the diagnosis. The thrombin time, whole-blood clotting time, and one-stage prothrombin time are generally prolonged. The plasmin activator level is usually elevated, but it may be normal in a few instances.[53] Plasma plasminogen levels are characteristically low.[53] The plasma clot is usually lysed within four to eight hours, and the plasma fibrinogen level is low.

The transfusion should be of fresh whole blood, instead of stored blood, because thrombocytopenia and deficiencies of labile clotting factors are frequently seen. Epsilon aminocaproic acid, 6 to 10 Gm./24 hrs., should be given intravenously in an emergency situation.[54] This drug blocks the activation of plasminogen. For maintenance therapy, it can be given orally in a dose of 1 to 2 Gm. every eight hours. Rarely is it necessary to infuse fibrinogen. Fibrinogen is prepared from pooled plasma, and carries the risk of causing serum hepatitis. Consideration should be given to the removal of the source of activator or thromboplastic substances (e.g., a retained dead fetus).

13. *Anticoagulant bleeding.* Frequently, hemorrhagic problems complicate the use of long-term oral anticoagulant therapy. Coumarin and phenylindanedione drugs depress several clotting factors by their antagonism to the action of vitamin K. Factor VII is depressed first, and "therapeutic levels" are usually reached in 36 to 48 hours. Depression of prothrombin and of factor X occurs more slowly, and "therapeutic levels" are not reached in most instances until the fourth or fifth day of treatment with the drug. Depression of factor IX (PTC) may occur even later. A factor-IX deficiency, unlike deficiencies of the other three factors depressed by oral anticoagulants, cannot be detected by the one-stage prothrombin time.

Many situations modify the response of the patient to the usual dose of anticoagulants. The patient with liver disease usually tolerates these drugs poorly. Other individuals who show a decreased tolerance to coumarin drugs include patients with poor nutrition, the elderly, those with fever, patients in congestive heart failure, and individuals who are receiving salicylates in large

* Abnormal test result.

amounts, phenylbutazone, sulfonamides or antibiotics. Vitamin-K production in the intestine may be decreased when antibiotics or sulfas are given, and a continuation of the usual maintenance dose of coumarin may result in bleeding.

A problem in the use of the coumarin drugs is bleeding, which may occur in patients despite a "therapeutic" one-stage prothrombin time. In a Mayo Clinic study, 60 per cent of patients who bled during a 10-year period of therapy had one-stage prothrombin times within the "therapeutic range."[55]

The clotting defect during the first few days of coumarin treatment is primarily a factor-VII deficiency. This causes significant prolongation of the prothrombin time, and patients may have prothrombin times of 40 to 50 seconds without bleeding. These same patients may bleed later, with prothrombin times of 28 to 30 seconds. As the duration of therapy increases, the more slowly responsive factor IX is depressed, as well as factors VII and X and prothrombin. Since a factor-IX deficiency is not measured by the one-stage prothrombin time, it may be severe and an important cause of bleeding, despite a one-stage prothrombin time in the therapeutic range. Accelerator activity may return toward normal as therapy continues, with resultant shortening of the prothrombin time, even though factor-IX depression has become severe.[6] Therefore, with patients on long-term coumarin therapy, there may be significant clotting-factor deficiencies which can't be detected satisfactorily by the one-stage prothrombin method.

Mild coumarin overdosage which has led only to an undesirable elevation of the prothrombin time may be treated by withholding the anticoagulant and giving a small dose of vitamin K_1 by mouth (2.5 to 5.0 mg.). Treatment of a severe coumarin overdosage with hemorrhagic complications consists of two measures: the intravenous injection of 10 to 50 mg. of vitamin K_1, and the use of blood or plasma. Since the vitamin-K effect will not be manifest for hours, blood or plasma will supply the deficient clotting factors immediately. It is worth emphasizing that *only* vitamin K_1 is an antidote for coumarin toxicity. Synkavite® and Hykinone® are not effective in this condition.

In our experience, bleeding following heparin therapy is less common than it is when coumarin drugs have been used. Should it occur, the heparin effect can be neutralized quickly by the intravenous injection of protamine. Heparin inhibits the clotting mechanism at three different stages, but unlike coumarin drugs, it does not produce deficiencies of clotting factors.

14. *Bleeding associated with multiple transfusions.* A troublesome and sometimes fatal hemorrhage occasionally occurs in a patient who has received large numbers of blood transfusions while undergoing a long operative procedure. The mechanism of the bleeding in such instances is not completely understood.[56] Stored blood is deficient in platelets and clotting factors V and VIII. Consequently, when more than five pints of blood have been given in a 24-hour period, fresh blood should be used for further transfusions in most instances. There is no need to give intravenous calcium solutions to patients who receive multiple transfusions, since it is practically impossible to infuse blood fast enough to produce hypocalcemia to the extent that bleeding results.[57, 58] One should consider the possibility of a proteolytic state, with high fibrinolysin and low fibrinogen levels. The diagnosis and treatment of this complication have already been described.

THE USE OF HEMOSTATIC TONICS

Therapy for bleeding conditions should be specific, or at least should be aimed at the patient's deficiency. Buckwalter and Connor[59] have reviewed the effects of various hemostatic agents.

Except for diseases in which there is a localized defect of the vascular system, the only logical approach to the control of bleeding manifestations is to correct the underlying hemostatic defect. This can be achieved frequently in thrombocytopenic states through the use of steroid therapy or platelet transfusions. In disorders of the coagulation mechanism, the only rational approach is to administer the coagulation factor that is missing. Consequently, it is essential to delineate the deficiency so that the most effective and direct therapeutic approach can be utilized. The use of hemostatic drugs for the treatment of bleeding patients without an attempt at making a specific diagnosis tends to be expensive and is potentially dangerous.

SUMMARY

A review of the recent developments in the diagnosis and management of bleeding disorders has been presented. It is impossible to present guides for diagnosis and treatment which are foolproof in the hands of all physicians and for all patients. It is hoped, however, that the information given will enable the physician to approach the bleeding patient with better insight, and will provide him a basis for safe and effective therapy.

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Drug Eruptions

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THE GREATEST ADVANCES in chemotherapy have been made in the twentieth century, but paradoxically, adverse reactions to drug administration are occurring more frequently and are increasingly severe. Our therapeutic armamentarium has been greatly enriched by the development of new agents, but unfortunately the ability of these drugs to sensitize frequently has paralleled or exceeded their therapeutic efficacy. Severe untoward reactions may be produced in sensitized individuals, regardless of the route of administration. The physician must be thoroughly acquainted with the pharmacologic action of the drug he proposes to use, with its therapeutic index and with its sensitizing potential.

The recent furor relative to the use of thalidomide should cause all physicians to consider carefully the merits of any compound that has been submitted to them for clinical trial. The therapeutic index of any drug, regardless of its efficacy, should be such that its use in human subjects is justified. Some investigators allow enthusiasm to replace judgment and careful observation when they evaluate their clinical results. Too frequently, authors publish poorly prepared preliminary reports containing misleading information. Oliver Wendell Holmes, in one of his medical essays, commented on the self-delusion of physicians who offer new methods of treatment. He stated that self-delusion tends to be inseparable from the practice of healing. Some persons, according to Holmes, have a natural incapacity for sound observation, and a singular inability to weigh the value of testimony. He remarked that the best way for them to correct their habit of counting only their favorable cases was to use the numerical statistical system. In any critical evaluation of new drugs and new methods of treatment, the investigator must compare his results with those obtained by competent, intellectually honest and careful observers. Therapeutic results in the treatment of one, two or three individuals, furthermore, are statistically valueless when compared with a study of results obtained in 100 or more patients.

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ERUPTIONS CAUSED BY SYSTEMIC MEDICATIONS

Drug eruptions represent only one type of adverse reaction to drug administration, but they are clinically more obvious than the others. Cutaneous reactions to medications may simulate practically every morphologic entity. The lesions which develop in a patient who has become sensitized to a particular drug are usually the same for that individual whenever the specific drug is readministered. This is known as the patient's reaction pattern. For instance, an adverse reaction to penicillin may occur as erythema multiforme in one individual, and as urticaria, purpura folliculitis or exfoliative dermatitis in others. The various morphologic entities which may be cutaneous expressions of drug sensitivity are: erythema multiforme, urticaria, folliculitis, vesicular and bullous eruptions, hyperpigmentation, hypopigmentation, hyperhidrosis, granulomatous lesions, keratoses, xanthoma-like lesions, erythema nodosum, lichen planus-like lesions, psoriasisiform lesions and pityriasis rosea-like eruptions.

All adverse reactions to drug administration are not allergic in origin. Direct toxic effects may be produced by such drugs as mercury, gold, bismuth, arsenic and sulfur on prolonged administration. The patient may react adversely to high doses of a particular drug, whereas if the therapeutic dose had been administered, the difficulty might not have occurred. Idiosyncrasy to prolonged drug administration may cause the formation of vegetating lesions such as are produced by iodides and bromides, or of keratoses, which are observed years after arsenic therapy has been given.

The diagnostic criteria for drug allergy are not definitive. In this type of allergic response, antibodies have not been directly or indirectly demonstrated, and there are no reliable clinical diagnostic tests. Skin tests are valueless. Evidence on which a diagnosis of an allergic drug eruption is based is presumptive, and includes (1) previous tolerance to the suspected drug; (2) production of the response by small doses; (3) a cutaneous response which differs from that produced by toxic action; (4) absence of an eruption in all persons treated or tested with the drug; (5) absence of cumulative effects; (6) production of a specific reaction differing from that which is produced by the drug's isomer; and (7) the fulfillment of the criteria of incubation period and cutaneous flare.

Simple chemicals or drugs may cause clinical manifestations similar to those produced by microorganisms or other allergens. There are variations in species susceptibility and immunity to simple chemicals, just as there are to microorganisms. Various drugs have different abilities to sensitize. Penicillin may cause urticaria, purpura, erythema multiforme, toxic erythema, exfoliative dermatitis or folliculitis. Although iodides and bromides usually cause follicular lesions, they may also cause granulomatous lesions. Phenolphthalein and antipyrine usually produce erythema multiforme, but also frequently cause fixed eruptions. Drug reactions are not always produced by the substance administered, but may be caused by its metabolites.

Cutaneous drug reactions may be classified as immediate or delayed. From the morphologic standpoint, immediate reactions are urticaria, purpura, erythema multiforme, toxic erythema, morbiliform eruptions and anaphylactic reactions, whereas delayed reactions are those which develop seven to ten days following the administration of the drug. The latter type of reaction is manifested as erythema multiforme bullosum, urticaria or a response resembling serum sickness.

Penicillin is one of the greatest discoveries of modern times, but has the highest sensitizing potential of any drug in our therapeutic armamentarium. The adverse reactions produced by this antibiotic may be immediate or delayed, and can vary from inconsequential follicular or urticarial lesions to extensive erythema multiforme bullosum, an anaphylactoid reaction and sudden death. This example typifies the extent and variation of drug reactions.

Erythema multiforme, whether papular, macular or bullous, is a reaction pattern when it represents evidence of drug hypersensitivity. It may be produced by many of the currently used patent medicines, proprietary drugs, antibiotics, antipyretics, etc. One of the most extensive cases of erythema multiforme bullosum encountered recently occurred in a young man who had taken a patent medicine containing an antihistamine for an upper-respiratory infection. This preparation is widely advertised and is freely employed by the laity. Eight hours after the patient took his initial dose of the drug, erythematous lesions developed, and within 48 hours he had an extensive eruption of reddish papules with some vesicles. Within one week, his entire body was covered with large blebs. Because of mucous-membrane involvement, he was unable to swallow. The clinical picture was characteristic of severe extensive erythema multiforme bullosum. At the time of hospitalization, he was moribund. Fortunately, systemic steroid therapy produced the desired effect, and the patient recovered. In this case, the reaction was attributed to the antihistamine contained in the patent medicine tablet.

The same type of eruption is frequently produced by antipyrine. This is an old remedy used in the treatment of febrile states, regardless of etiology. It is contained in a number of patent medicines, one of which enjoys wide usage among the colored population in the southern states. The product has been productive of so many severe adverse generalized reactions of the erythema multiforme bullosum type that the product is under federal surveillance. It is necessary to hospitalize several patients each year at the University of Maryland because of reactions to this drug. Occasionally but not so frequently, and usually in a less severe form, this type of reaction is attributed to phenolphthalein, which is contained in many of the commercially available cathartics. Barbiturates, particularly phenobarbital, will also produce erythema multiforme.

Purpura is another cutaneous morphologic entity which may be produced by Butazolidin, penicillin, Chloromycetin, arsenic and many other drugs. Morbiliform eruptions simulating measles may be produced by aspirin, penicillin, barbiturates, antihistamines, atropine, Chloromycetin, digitalis, antipruritic drugs, sulfonamides and other compounds.

Urticaria varying in severity from few to many lesions may be caused by an allergic reaction to penicillin, aspirin, antihistamines, barbiturates, codeine and many other drugs.

Fixed drug eruptions are those in which the site of the lesion but not of the reaction is fixed. The lesions develop as oval or round erythematous patches, occasionally associated with edema but also leaving hyperpigmentation when the lesions subside. These lesions may be single or multiple. The original eruption may have been macular, urticarial or bullous. Involved sites may lose reactivity, partially or completely, temporarily or permanently, but new areas may become sensitized. A polyvalent sensitivity may exist, so that a site which reacts to antipyrine may also become activated when phenolphthalein or barbiturates are administered. Skin testing is of no value in this type of lesion. The challenging dose must be administered orally or parenterally. This type of allergic reaction most frequently results from the administration of antipyrine, phenolphthalein, barbiturates and similar compounds.

Photosensitivity reactions in the skin may be produced by barbiturates, griseofulvin, chloropromazine, sulfonamides and other drugs. This type of reaction develops primarily on exposed surfaces. The eruptions appear with greater frequency in the spring and summer months, and the reaction is cumulative.

Drugs have different degrees of ability to sensitize. Although it is true that there is a tendency for certain drugs to produce characteristic responses, there is no hard and fast rule. In order to conserve time and space, only a few typical examples have been mentioned in the preceding paragraphs.

Allergic reactions in human subjects vary according to the individual's manner of response. There are as many variations in intensity, dis-

tribution and morphology of lesions as there are sizes, shapes and complexions of human subjects. A person may become sensitized to anything under the sun, and indeed to the sun itself.

ERUPTIONS CAUSED BY TOPICAL MEDICATIONS

The preceding paragraphs have been concerned primarily with systemically administered medications. The compounds available commercially for topical application are too numerous to mention. The sensitizing potentials of various topical medications vary considerably. Antihistamine ointments, creams and lotions, penicillin ointment, Merthiolate and other organic mercurial compounds, mercurial ointments, nitrofurans and hexachlorophene-containing compounds are examples of substances which have a high sensitizing index, whereas the sensitizing potentials of boric acid, neomycin, salicylic acid, zinc oxide and coal tar are quite low. The cutaneous manifestations of sensitivity to any of these compounds vary considerably with the individual patient's capacity to react.

Allergic contact dermatitis is a true sensitization phenomenon. A carefully detailed history and a physical survey are important steps in the investigation of allergic contact dermatitis.

The diagnosis of allergic contact dermatitis may be established by the use of the patch test. Patch testing must be carefully performed, and the test material used must be in the proper dilution. A negative result may not be significant, for the site tested may not be sensitive, or the patient may have been in a refractory state. Under no circumstances should the test be performed while the patient still shows evidence of acute contact dermatitis.

The major principle in the treatment of contact dermatitis is to remove the offending agent from the patient, and to have him avoid the use of soap and instead employ emollient baths. Do not use steroid therapy unless the process is generalized and the patient is in acute distress. Frequently, the use of topical steroid therapy will produce a satisfactory result.

SUMMARY

In summary, the practicing physician should ask himself the following questions:

1. Is my diagnosis correct?
2. Is this medication really necessary to accomplish the desired result?
3. Am I sufficiently acquainted with the possible adverse reactions which may develop from the use of this medication?
4. How will this medication affect the patient's immune status?
5. Am I using adequate dosage?
6. Is there any other less reactive compound that I could use which would accomplish the result I want to obtain?

Treatment of Trichomonas Vaginitis By Oral Metronidazole (Flagyl)

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A FREQUENT CAUSE of severe leukorrhea in women of menstruating age is Trichomonas vaginalis. This motile protozoon has a higher frequency in the lower socio-economic groups, but it is found in the vagina in about 20 per cent of all women, and vaginitis associated with Trichomonas vaginalis may take up from five to 10 per cent of a typical office gynecologic practice.

This scourge of the feminine population is characterized by its unpleasant symptomatology, its resistance to most previous forms of treatment, and its peculiar ability to produce chronic vaginitis and cervicitis, with frequent and acute exacerbations.

A great variety of preparations have been used in treating trichomoniasis—various powders, creams, solutions, inserts, douches, suppositories, antibiotics, steroids, sulfonamides. None of them, however, have been specific for Trichomonas, and few if any have achieved success rates exceeding 75 per cent. The 1963 PHYSICIAN'S DESK REFERENCE listed 37 products for the treatment of this form of vaginitis which has become a source of much distress to the patient and of frustration to the physician.

The difficulty in eradicating this trichomonad has been compounded by its ability to reinfest—usually after intercourse with an infected but not necessarily symptomatic consort. The lesser role of towels and toilet seats, in spreading the disease, has also been adequately demonstrated.[1]

Following exhaustive laboratory and clinical

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trials, a specific trichomonacide has recently been approved by the Federal Food and Drug Administration for distribution on prescription. Since January, 1959, this product—metronidazole (Flagyl)—has been used with remarkable efficacy in Western Europe, England and Canada, and it has also been used as an investigational drug since October, 1959, for some 8,000 patients in the United States. Metronidazole is a derivative of nitroimidazole (1-beta-hydroxyethyl-2-methyl-5-nitroimidazole), available as 250 mg. tablets for oral use, and as 500 mg. vaginal inserts. Although a specific trichomonacide, it is inactive against Candida albicans and the Dodërlein bacillus. Previous publications have consistently reported high cure rates (90-98 per cent) after a 10-day course of the oral preparation, with relatively few side effects.

General availability of metronidazole in this country was delayed until its safety for human beings had been thoroughly established. This factor, presumably, has now been satisfied beyond doubt.

The purpose of this paper is to present the experience at the S.U.I. Department of Obstetrics and Gynecology with metronidazole, from June, 1961, through July, 1962.

METHODS AND MATERIALS

Seventy-three women received 76 ten-day courses of treatment with metronidazole oral tablets* for proved Trichomonas vaginalis vaginitis. Vaginal inserts were not used in these patients.

Diagnosis was made by microscopic identification of trichomonads on a wet-smear suspension of vaginal exudate. Other diagnostic technics of culture or cytologic examination were not used in this series.

The ages of the patients ranged from 16 to 54 years. Fifty-three patients were married; 13 were single; six were divorced; and one was widowed. Forty husbands of the married patients were treated concomitantly with oral Flagyl.

Five women were pregnant; two of them were in the second, and three in the third trimester.

Table 1 shows the duration of the patients' vaginitis prior to the administration of Flagyl. The majority had had sporadic treatment for trichomonas vaginitis for more than two years, some for as long as five years, and one for 12 years.

The dosage of oral Flagyl ranged from 500 to 1,000 mg. daily, for 10 days. The majority of women took two 250 mg. tablets per day. All of the treated husbands were given the dose schedule of two 250 mg. tablets daily, for the same 10 days.

Patients in the earlier phase of the study had urinalyses before and after treatment, as well as blood examinations. The majority, however, had only blood examinations, since concern for side effects on the urinary tract had proved unfounded.

* Kindly supplied as Flagyl by J. W. Crosson, M.D., assistant medical director, G. D. Searle & Co., Chicago.

TABLE 1

DURATION OF TRICHOMONIASIS IN PATIENTS BEFORE TREATMENT WITH METRONIDAZOLE

	Patients
Acute (less than one month)	8
One through five months	4
Six through 11 months	8
Twelve through 24 months	8
More than two years	40
Chronic (duration not given)	5
Total	73

RESULTS

Of the 73 patients treated, six were lost to follow up and have been excluded from the results. Of the remainder, 64 had primary cures, for a success rate of 95.5 per cent, as manifested by the disappearance or marked reduction of symptoms, plus negative wet-smear microscopic examinations.

Two women had persistence of trichomonads on wet smear after the 10-day course of treatment. One of these was late in pregnancy. She had received good symptomatic relief, and was scheduled for retreatment following delivery. The other received a second course of Flagyl, and again lacked subjective or objective improvement. She had received a variety of other medications for the previous five years.

The other patient who failed to achieve a sustained cure had been treated for three years with varied preparations. Two weeks after her Flagyl course, she was asymptomatic and her microscopic examination was negative. Although intercourse was forbidden her, she had a positive wet smear and severe leukorrhea two weeks later, and a repeat course of Flagyl failed to eliminate the trichomonads.

A married patient treated without her husband was cured initially, but several weeks later she had a positive wet smear. Each of the marital partners then was treated, and four weeks later the wife was again cured.

Another woman still complained of leukorrhea at the four-week post-treatment examination. Trichomonads were absent, but a fulminating Candida albicans infection was present.

Prolonged follow up has not been possible in many of our patients. Forty-six were cured when examined from two to six weeks after therapy; 12 from seven to 11 weeks afterward; and four from 12 to 16 weeks later. Only five have been followed from four to 10 months, but they have remained cured.

No abnormality of the urine was observed. Earlier, there had been infrequent reports of darkening of the urine during or immediately following treatment, but they were not substantiated by the S.U.I. study.

Forty women and 13 husbands had complete pre- and post-therapy blood examinations. In only

one was there evidence of the significant but transient change in blood count that had been observed by Hesseltine and Lefebvre.[2] One of three women who received a second course of Flagyl demonstrated a mild change in her leukocyte differential, with a relative decrease in neutrophils. Her pre-treatment blood count was: hematocrit 46 per cent; hemoglobin 15.2 Gm. per cent; and white blood cells 8,000/cu. mm., with 2 bands, 60 neutrophils, 30 lymphocytes, 6 monocytes, 1 eosinophil and 1 basophil per 100 cells. After treatment: hematocrit 45 per cent; hemoglobin 14.0 Gm. per cent; and white blood cells 9,200/cu. mm., with 3 bands, 46 neutrophils, 45 lymphocytes, 5 monocytes and 1 eosinophil.

The incidence of subjective side-effects was low. Only seven patients complained of one or more of the following: mild nausea (during the first three or four days of treatment)—3; mild headaches—2; bad taste, coating of tongue, or distasteful cigarettes—4; slight anorexia—1; macular, pruritic rash of the abdomen—1. None of the patients stopped the medication early, and all side effects disappeared within three days after the completion of the 10-day course.

None of the five pregnant patients suffered apparent ill effects. All have delivered normal infants. Four had immediate cures, and the fifth had good symptomatic relief, but a positive wet smear persisted. Other reports have also indicated a lesser efficacy of treatment during pregnancy.

DISCUSSION

The woman with trichomoniasis is an unhappy one; her manifestations may even lead her into emotional instability or depression.[3] The severe vaginitis can lead to dyspareunia, frigidity or other sexual disturbances. Domestic tension sometimes results. Another sequel of this entity is a difficulty in the interpretation of a Papanicolaou smear. The associated cervicitis, with at least partial ulceration, causes a rapid proliferation and shedding of exposed cells from the parabasal layer. These shed cells may account for as much as a Class III abnormality. Considerable waste of time and money may be occasioned by the necessity of ruling out a neoplastic process. Obviously, a safe and effective trichomonacide should have far-reaching acceptance.

Epidemiology of trichomoniasis must be considered along with methods of treatment. Although other agents may play a minor role, the primary means of transmission must be regarded as the venereal.[4, 5] The failure of the medications previously available would seem to have been due in part to their inability to reach extragenital foci in the female (e.g., Bartholin's and Skene's glands, and the urethra), but also to a failure to treat the genitourinary tract of the male consort. It is estimated that at least 60 per cent of husbands of women with trichomoniasis are affected by the disease. Few have symptoms, and most are merely carriers. According to Teton and Treadwell,[1] recovery of organisms from the male is difficult. Without a specific trichomonacide, husbands may be asked to use a condom during intercourse for six to eight weeks, in anticipation of a spontaneous regression of their infection. This requirement is obviously impractical, however.

Numerous reports have praised the efficacy of metronidazole. Two representative articles may be cited. Jones *et al.*[6] cured 209 of 214 women, and all were asymptomatic within three to five days following therapy. Clark and co-workers[7] studied Flagyl and five other products recommended for trichomoniasis. They found a 96 per cent success rate with Flagyl, and none of the other five was as much as 50 per cent effective. The present series also shows the superior effectiveness of metronidazole, with a 95.5 per cent initial cure rate.

The manufacturer's recommended regimen for the affected female is a 10-day course of 250 mg. tablets taken orally three times daily. Williams[9] found no superiority of results in the initial course when both the tablets and the vaginal inserts were used, as compared to just the tablets alone. The 500 mg. metronidazole inserts are probably best reserved for the extremely stubborn case, with a regimen of one insert per day for 10 days and a reduction of the oral dose to 500 mg./day during that period. The use of vaginal inserts alone is not advised.

Ideally, one should undertake treatment of the male only after making an examination and arriving at a definite diagnosis. Unfortunately, this is not always feasible. An empirical course of 500 mg. of metronidazole per day for the same 10 days as the wife's treatment may be an alternative, particularly when the wife's case is a long-standing one, in which the husband's infection is a near certainty.

A small number of failures may be expected after the initial course of treatment. Some women may require a second or even a third course of Flagyl for microscopic cure.[2, 5] When a repeat course is necessary, it is advisable to allow a four- to six-week interim, and to obtain white blood cell counts before, during and after treatment. Should leukorrhea persist, a search for Candida albicans must be undertaken. A known or previously unrecognized case of this yeast infection may become more prominent after cure of the trichomoniasis.

This series confirms the low incidence of previously related side effects. In one compilation of over 2,300 cases,[8] the few side actions most commonly were associated with the gastrointestinal tract—e.g., nausea or vomiting in 116, and an unpleasant taste or "furry tongue" in 67. There were infrequent early reports of darkened urine during treatment. The pigment probably responsible has not been positively identified, but it probably is a metabolite of the drug, and it has usually been encountered following the administration of doses larger than those that are now recommended. We can assume from the fact that the F.D.A. has cleared the drug for general use that the agency's

earlier concern about possible ill effects on the blood, the central nervous system and the testis-epididymis has been dispelled.

Five women in the S.U.I. series were treated during the last two trimesters of pregnancy, apparently without harm to themselves or to their infants. Williams[9] had the same findings after treating 14 pregnant women. However, recent information indicates that metronidazole can pass to the fetus and produce as yet undetermined late effects. Thus, on the basis of present information, the drug should not be used during pregnancy.

CONCLUSIONS AND SUMMARY

Metronidazole is a specific trichomonacide that produced a 95 per cent cure rate in the present series. The manufacturer's recommended regimen is one 250 mg. tablet by mouth three times daily for 10 days. Our results were equally good with one tablet taken twice daily. In extreme cases, a vaginal insert may be used in conjunction with reduced oral therapy. In cases of long-standing infection in a married woman, her husband should also be treated, preferably after examination and confirmation of associated trichomoniasis.

Persistence of leukorrhea after completion of therapy should be investigated for moniliasis as well as for resistant trichomoniasis.

There were a few minor but no major side effects. It was not necessary to discontinue therapy prematurely, and all complaints disappeared soon after completion of the 10-day course.

Metronidazole has been used without apparent ill effects during late pregnancy, yet newer information suggests that it should not be used in pregnant women.

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CLINICAL SUMMARY

A 46-YEAR-OLD WHITE FEMALE was first seen at the University Hospitals two months before her death, for evaluation of a chronic anemia of 18 years' duration that had first been noted following childbirth. Treatment had consisted of several series of "liver shots," until three years prior to admission, when she was started on oral iron. At that time, the patient had been told she had diabetes mellitus, and she had been started on tolbutamide, 1 Gm. per day. Approximately three months before her admission, the patient had noted progressive weakness and tiredness, heavy menstrual bleeding, frequent episodes of epistaxis, and an increased number of black and blue marks on her skin as the results of mild bruises. She denied pain, melena, hematuria, or other symptoms. The patient had lived on a farm for many years, but could substantiate no exposure to toxins. There was no family history of diabetes. Her father and grandfather were said to have been anemic. She used neither alcohol nor tobacco.

Physical examination revealed an obese, pale, white, middle-aged housewife in no distress. The blood pressure was 130/80 mm. Hg, and the pulse was 104/min. and regular. Several large ecchymoses were scattered over the trunk and limbs. Examination of the head and neck was unremarkable, except for numerous old and fresh retinal hemorrhages. The lungs were clear to auscultation and percussion. The heart was not enlarged to percussion. There was a grade II apical systolic murmur which radiated to the axilla. The abdomen was very obese and difficult to evaluate. A huge, non-tender mass was present, filling the entire left upper abdomen and extending to the level of the iliac spine. The liver margin was indistinctly palpated 3 cm. below the right costal margin. The remainder of the physical examination was considered normal.

The urine had a specific gravity of 1.025, a pH of 6.0 and a trace of albumin, and it was strongly positive for reducing substance. Microscopic examination was negative. The hemoglobin level was

5.3 Gm./100 ml., the white blood cell count was 1,500/cu. mm., and the peripheral differential smear was normal. The platelet count was 20,000/cu. mm. The sedimentation rate was 60 mm./hour. The reticulocyte count was 2.2 per cent. Red blood cells showed hypochromasia, anisocytosis and poikilocytosis. The direct Coombs' test was negative. The bleeding time was 3 min., 45 sec., and the clotting time was 10 minutes, with complete clot retraction in one hour. Red-cell fragility studies revealed initial hemolysis at 0.42 per cent, and complete hemolysis at 0.28 per cent. The serum iron was 21 mcg. per cent, with a total iron-binding capacity of 371 mcg. per cent. The prothrombin time was 16 seconds, compared to a control of 14 seconds. Bone-marrow aspiration revealed moderately hypocellular marrow with a M:E ratio of 1:1. Platelets were diminished in number. A repeat marrow examination performed three weeks later on bone removed at operation showed hypoplasia of bone marrow. Alkaline phosphatase stain of the leucocytes was graded as 3 to 4+. Serum uric acid was 3.0 mg. per cent. The blood urea nitrogen was 10 and the creatinine 0.7 mg. per cent. Serum albumin was 3.0 and globulin 3.9 Gm. per cent. The fasting serum cholesterol was 272 mg. per cent. Alkaline phosphatase was 1.6 and the SGOT 16 units. BSP retention was 28 per cent in 45 minutes, and a repeat test was 18 per cent. Cephalin flocculation was 4+, and thymol turbidity 5.7 units. Skin tests of tuberculin, Blastomycin, histoplasmin, and coccidioidin were applied, and were reported as negative in 48 hours. Postprandial blood sugars were moderately elevated. An intravenous pyelogram was interpreted as normal. A roentgenogram of the abdomen showed an abdominal mass which was interpreted as probably spleen.

The patient was placed on a diabetic diet, was given NPH insulin and was transfused with whole blood. Following evaluation of the initial laboratory studies, she was given prednisone, 60 mg. per day in divided doses, and ferrous sulfate. The prednisone was maintained at this level for three weeks, during which time the hemoglobin remained stable at approximately 10.0 Gm./100 ml.; the white blood cell count increased to 2,650/cu. mm.; and the platelets diminished to 12,000/cu. mm. The patient remained comfortable, and no evidence of new bleeding was noted. Repeat bone-marrow aspiration revealed no change since the previous examination.

At this time the patient insisted on returning home for a short visit. On discharge she was instructed to taper her prednisone dosage slowly, and to continue NPH insulin and ferrous sulfate. Immediately prior to discharge, a needle biopsy of the sternal marrow revealed a moderately hypocellular marrow with many fat cells. There appeared to be a moderate decrease in myeloid elements and a marked diminution of erythroid cells. There were numerous small cells having small, very hyperchromatic nuclei suggestive of normoblasts, but lacking the characteristic clumping. The megakaryocytes appeared to be normal in number.

Two weeks after returning home, she tripped accidentally and fell over a chair, striking her right hip. She found herself too weak to rise, and waited till her husband returned home to help her. The following morning she passed a bloody stool and later, a tarry stool. The patient was readmitted to the hospital in a semicomatose state.

In addition to the previous findings, physical examination revealed extensive swelling and discoloration over the right hip, icteric skin, and extensive areas of purpura over the trunk and limbs. The blood pressure was 100/60 mm. Hg, and the pulse rate was 140/min. The abdomen was mildly and diffusely tender, and the bowel sounds were markedly diminished. Rectal examination produced grossly bloody stool. The admission hemoglobin was 5.0 Gm. per cent, and the hematocrit 18 vol. per cent. Following three units of fresh whole blood, the hemoglobin was 8.2 Gm./100 ml., the red blood cell count was 2,570,000/cu. mm., and the white blood cell count was 4,900/cu. mm., with a normal peripheral smear. The platelet count was 27,000/cu. mm. Blood urea nitrogen was 25, and creatinine was 0.8 mg. per cent. Serum electrolytes, acid and alkaline phosphatase were normal. The serum bilirubin was 3.4 direct and 9.1 indirect. Gastric aspirate produced coffee-ground material positive to hematest.

The patient was kept on nasogastric suction, was fed intravenously, and was transfused with fresh blood. The prednisone was increased to 60 mg. per day. On the second hospital day, the patient's temperature rose to 103° F., and chloramphenicol was given with no apparent effect. The coma progressively deepened, and the patient expired approximately 48 hours after admission.

CLINICAL DISCUSSION

Dr. R. F. Sheets, Internal Medicine: Mr. Lewiston will discuss the protocol for the junior students.

Mr. N. Lewiston, junior ward clerk: We believe the patient had a pancytopenia caused by marrow suppression, and that this was caused by chronic congestive splenomegaly or Banti's syndrome, which in turn was secondary to hepatic cirrhosis. We further believe that she died after traumatic rupture of her enlarged spleen.

A pancytopenia due to aplastic anemia was our first consideration. There was no history of toxic exposure, however, unless one considers tolbutamide a toxic substance, as it was reported to be in the November 9, 1963, issue of J.A.M.A. Another argument against primary aplastic anemia is that reticulocytosis and splenomegaly are not a usual part of the clinical syndrome seen with this disorder.

The finding of splenomegaly without a systemic involvement such as superficial lymphadenopathy,

fever or pain, contraindicates a lymphosarcoma or Hodgkin's disease. This lack of systemic involvement also rules out infectious diseases such as miliary tuberculosis or Boeck's sarcoid, and the lack of other findings makes us rule out syphilis. In aleukemic leukemia, we should expect to see a preponderance of immature white cells in the marrow, with an increase in the M:E ratio, and also we should expect a marrow hyperplasia. In fact, the M:E ratio was decreased, and the marrow was hypoplastic.

A myelophthisic pancytopenia caused by a metastatic cancer, multiple myeloma, or one of the primary xanthomatoses, such as Gaucher's disease, must be considered. These are usually characterized by bone pain and/or distinct clinical findings which have not been described here. In addition, one usually can diagnose these disorders by identifying the typical cells, and the marrow is usually hypercellular. A myelofibrosis can produce the clinical picture seen in this case. It can also yield a hypoplastic marrow and even abnormal liver-function studies. In this disease, marrow aspirations are usually unrewarding, as was reported, but a surgically trephined specimen of marrow, such as was obtained, would surely have shown the characteristic fibrous tissue replacing the marrow cells.

We are now left with a search for a reason for marrow depression, splenomegaly, and parenchymal liver damage. We feel that the best explanation for these is chronic congestive splenomegaly or Banti's syndrome. The hypoplasia of the marrow is a puzzle. It has been supposed—and reported in the older literature, though not recently—that splenomegaly may have an inhibiting effect on bone marrow and so may produce hypoplasia rather than hyperplasia. We believe this was the case.

Portal hypertension, which is regarded as the cause of Banti's syndrome, can be the result of a number of situations. Among these are intrahepatic thromboses or external compression of the portal vein. We should prefer, however, to consider an intrahepatic cause such as obstruction due to cirrhosis. The abnormal liver-function studies support our decision. Carcinoma, either primary or metastatic, rarely causes portal hypertension. The presence of Laennec's or fatty cirrhosis is not supported by a history of alcoholism or poor diet. It is known, however, that diabetes and obesity can be associated with otherwise unexplained occurrences of this disorder. Again, there is no clinical evidence for hepatitis. It is known that postnecrotic cirrhosis can occur in patients who have never been jaundiced.

At this point the scaffolding of our argument is weak, and we are being bold. We suggest, rather than conclude, that in the previous few months this lady had suffered a subclinical hepatitis superimposed on an already cirrhotic liver, and that this insult was enough to precipitate the Banti's syndrome and to produce the clinical picture of easy bruising and bleeding. We believe her chronic anemia and low serum iron can be explained, in part, by silent bleeding from her esophageal varices. Her long-term anemia may well have been due to a hypoplastic marrow due to suppression, probably by the Banti's syndrome or by some unknown silent cause that we have not considered.

We feel the cause of her death was a subcapsular rupture of her tense and distended spleen, when she fell over a chair in her home, and that this fall also caused increased bleeding from her esophageal varices. By the next morning, her splenic capsule had given way, permitting hemoperitoneum and its accompanying clinical signs. The patient was readmitted to the hospital in shock, with hemorrhage as a terminal event.

Dr. Sheets: Dr. Kaung, of the Department of Medicine at the VA Hospital, will discuss the protocol.

Dr. D T. Kaung, VA Hospital: This lady had an anemia of 18 years' duration. I don't think there is enough in the protocol to tell us what kind of anemia it was. It may have been a pernicious anemia, or it could have been an iron-deficiency anemia. What relationship that had to her present illness, again, there are insufficient data to tell us. The patient's father and grandfather were said to have been anemic. This family history could suggest pernicious anemia, and also a hereditary or familial disease. I'm not familiar with Fanconi's type of refractory anemia. It is said to be associated with pancytopenia, but it occurs rather early in life. Since the patient became sick in her late 20's, the onset in this case was a little late. Furthermore, we are not told of any congenital anomalies. The present illness had been of rather short duration—three months.

Several facts stand out in the protocol, and one of these has already been mentioned. The patient was admitted with definite manifestations of pancytopenia, such as weakness, fatigue and ecchymoses. The next rather impressive finding was a hypoplastic marrow. It was not hypoplastic on just one occasion, but was found to be so on many occasions, including a surgical biopsy during her hospital course. The third impressive finding was the huge mass in the left upper quadrant. The roentgenogram gave us a hint that this was spleen, and I don't see any particular reason to doubt that it was. Also, the lady had some slight enlargement of the liver and some damage to liver function.

The BSP's were abnormal, and so were the cephalin flocculation tests. Could the patient have been suffering from an aplastic type of anemia? The initial symptoms were quite compatible with that diagnosis. This condition can be the result of a drug or poison. No such history is available. But the lack of history does not rule it out, for such information is difficult to obtain. Also, of course, she could have been suffering from the idiopathic variety. One point that is difficult to explain in a case of simple hypoplastic or aplastic anemia or poisoned marrow would be the huge spleen. A

slight enlargement of the spleen would be compatible with this diagnosis, but not a huge spleen.

We have already heard the argument for Banti's congestive splenomegaly. Again, the peripheral blood findings are compatible with it, as is the enlarged spleen. It is true that occasionally the marrow is hypoplastic in this condition, but generally the marrow tends to be hyperplastic and shows an active response to the increased destruction by the spleen. Formerly, this was a fairly popular diagnosis. Some related conditions, etiologies unclear, are rarely diagnosed these days. These are the hypersplenic syndromes described by Wiseman and Doan. They can be pancytopenic and can include enlargement of the spleen, but again the marrow is considered as a reactive organ to compensate for the destruction in the spleen, and therefore is usually hyperplastic.

We have also heard mention of a group of miscellaneous systemic diseases such as sarcoidosis, lymphoma, Hodgkin's, tuberculosis, malignancy, and so forth. Patients with any of these can have splenomegaly at times. Sometimes the disease is localized to the spleen and does not give the usual generalized picture that we expect. Occasionally, patients have pancytopenia. But again, although the bone marrow in these cases can be hypoplastic, it is more likely to be normoplastic or hyperplastic. I cannot definitely say that our patient did not have any of these conditions.

One sentence in the protocol bothered me. In the marrow, we are told, were many small cells, "suggestive of normoblasts, but lacking the characteristic clumping." I think that if these were normoblasts, and especially if they were polychromatic or orthochromic normoblasts, they should have been easily recognized as normoblasts. It is possible that they were lymphocytes, which would go along with an aplastic marrow. It is also possible these cells are the ones found in the rare condition of macroglobulinemia. This is somewhat farfetched, but we do know that macroglobulinemia can be associated with pancytopenia, and the marrow may not be very hyperplastic. Such patients do have hepatosplenomegaly, but massive splenomegaly is unlikely. Also, the bleeding of these patients is usually from mucous membrane, rather than the ecchymosis, petechiae, and purpura manifested by this patient.

We recently had occasion to discuss a case of pancytopenia related to paroxysmal nocturnal hemoglobinuria. Some of these patients do not have the usual episodic hemolysis, and can manifest pancytopenia. Again, their bone marrows are not likely to be hypoplastic, and their spleens are not likely to be very large.

We now come to another category of diseases—the leukemias. This patient could have had an acute leukemia, or a chronic leukemia that had become acute. The pancytopenia and the bleeding fit, but the hypoplastic bone marrow is not compatible with this diagnosis, and it was confirmed repeatedly by aspiration and surgical biopsy.

The peripheral blood was mentioned twice in the protocol, and the statement was made that the morphology was normal except for some anisocytosis and poikilocytosis. The bone marrow morphology was not mentioned. In the absence of any confirmation from the bone marrow or the peripheral blood, one cannot make a diagnosis of leukemia of any kind.

This leads one to the last category of myeloid metaplasia or myelofibrosis. Patients with a condition of this sort can have pancytopenia, and they should have a hypoplastic though not necessarily an aplastic marrow. Occasionally there is even a hyperplastic marrow. Often a very large spleen is present, and liver-function damage and enlargement may be seen.

There was an additional finding—the leukocyte alkaline phosphatase. I would take it that 3 to 4+ is elevated. This is a relatively new test of the white blood cells. We don't know the complete spectrum of the negativity or positivity of the leukocyte alkaline phosphatase in all diseases. Ordinarily it is used to differentiate myeloid metaplasia, for instance, from chronic myelogenous leukemia, polycythemia, and so forth.

Most cases of myeloid metaplasia show an increased alkaline phosphatase in the leucocytes, but some do not. This is in contrast to the chronic myelogenous leukemia, in which patients characteristically have a low alkaline phosphatase. One of the conditions mentioned in the miscellaneous group, Hodgkin's disease, does have elevated alkaline phosphatase. The aplastic anemias have not been thoroughly studied, but patients with some of the refractory types of anemia have been known to have decreased alkaline phosphatase.

The relatively normal peripheral blood morphology is disturbing. I should say the peripheral blood ought not to be normal, although in looking over the cases of myeloid metaplasia that have been reported, I find cases which presented none of the characteristic changes usually associated with the disease. What are these changes? The patient did have some poikilocytes. Many doctors feel that the finding of teardrop-shaped red cells is highly suggestive, and we like to see them. In addition, one expects a so-called leuko-erythroblastotic reaction. In other words, the patient should have nucleated red cells in the peripheral blood, in the absence of a very marked anemia. He should show some young white cells and some bizarre shaped platelet abnormalities and sometimes very large ones, even at times megakaryocytes.

I don't know how to explain the normal morphology of the differential smear, especially near the end when the patient was dying. I wonder whether mention of some changes may not actually have been deleted from the protocol to make the case more interesting.

The bone marrow, as I have said, is quite compatible with the diagnosis of myeloid metaplasia. Ordinarily we don't go into a surgical biopsy unless we are dissatisfied with the bone-marrow

aspiration. Of course we are looking for fibrosis. Nothing was mentioned about the morphology of the bone marrow. All we are told is that the marrow was hypoplastic, with an M:E ratio of one to one. Were there any young cells which would help in the diagnosis of leukemia? Was there any suggestive fibrosis in the marrow?

Of course in the diagnosis of myeloid metaplasia, we like to see all the following: myelofibrosis, actual proof of myeloid metaplasia in the spleen (this can be secured either by biopsy of the spleen or by radio-isotope technics showing myeloid function in the spleen), and the peripheral blood changes. In the absence of these findings, the diagnosis is somewhat shaky. But considering all the objections and the favorable points, I am still inclined to think the patient had this condition. This is a rather short course for the disease, but we don't know how long the process had been going on. It may have been smoldering for several years. The terminal event is probably mostly hemorrhagic, as already mentioned. The patient did live for about two days after this episode. It is possible the spleen was ruptured; on the other hand, we are not completely sure.

We do have suggestions the patient had intraperitoneal bleeding, and the coma might well suggest bleeding into the brain. Also there was extensive GI bleeding, which may have been due to a terminal ulcer, though frequently there are rather extensive petechiae or hemorrhagic spots throughout the GI tract because of the bleeding tendency. The patient also had diabetes mellitus. This has been associated with some of these diseases, but there is no proof of any definite causal relationship with the terminal event.

The patient probably had iron-deficiency anemia. To be sure, the patient was bleeding, and the serum iron was low. But the serum iron itself is not an absolute criterion for the diagnosis of iron-deficiency anemia. It would be more certain if iron deposits were looked for in the bone marrow. A patient who is having considerable hemorrhage and perhaps has some hemolysis may have a high serum iron instead of a low one. The final fever is compatible either with bleeding or with the terminal pneumonia from which these patients frequently succumb.

Dr. Sheets: Dr. Kaung, I think the first description of a peripheral smear is typical. Later, I think, you will notice that transfusions were given before the peripheral smear was reported normal. I think the appearance changed somewhat, but there were no striking changes.

Are there any questions? I should like to ask Mr. Lewiston one. Did you consider hemachromatosis?

Mr. Lewiston: Yes, we did, Dr. Sheets, but we feel the low serum iron and high iron-binding capacity would not be compatible with this condition. We were intrigued with the splenomegaly, hepatomegaly, and diabetes mellitus, but the patient did not have the skin pigmentation we would expect to be present.

Dr. Sheets: Dr. Abboud is concerned about the terminal episode and proposes that possibly adrenal hypoplasia or bleeding into the adrenals may account for it.

Mr. Lewiston: We are very amenable to suggestions. Indeed, we feel that in view of the thrombocytopenia, multiple bleeding sites were a possibility. We welcome any suggestions as to the possibilities, but we still feel that she had a hemoperitoneum.

Dr. Sheets: Someone wishes to know the rationale for giving the chloramphenicol.

Mr. Lewiston: It was our belief that the clinicians felt a peritonitis was imminent, and if this were due to a coliform organism, chloramphenicol would not have been a bad choice. Since this lady was in shock, was bleeding badly, and had cause for peritonitis and/or pneumonia, it would have been one of the best choices. One might also wonder about the giving of prednisone, but this lady was dying and I think this was a last effort.

Dr. Sheets: I don't see anyone here today who took care of this patient, but in going through the record, I should agree in raising a question concerning chloramphenicol. It seemed to me that this probably was a "last rite" rather than a treatment.

Dr. H. E. Hamilton, Internal Medicine: What is meant by "hyperchromatic nuclei"? Does it tell us anything about the stage of cell development or the kind of cell?

Dr. D. S. Longnecker, Pathology: I'll cover it in the pathology presentation.

Dr. G. N. Bedell, Internal Medicine: I think it should be pointed out that even though it is repeatedly looked for in a patient with anemia, a leukemia occasionally will hide itself from view and will be manifest neither in the bone marrow nor in the peripheral blood. The course here was consistent with leukemia. I'm not sure that's what she had, but I think it's something that must be considered, even in the presence of multiple negative bone marrows and blood smears.

Dr. Sheets: In its undetectable stage, this has been called preleukemia by some people, and it certainly is a distinct situation.

Dr. Daniel S. Longnecker, Pathology: There are relatively few autopsy findings, all of which are closely related, but I think they do a good job of explaining the findings in the clinical protocol. The basic process was cirrhosis. The patient's liver weighed 1,500 Gm., and showed a moderate degree of scarring. We felt that the parenchymal damage and the circulatory abnormalities which would have resulted from this were an adequate explanation for the abnormal liver-function tests described in the protocol. There apparently was portal hypertension as a result of the cirrhosis, and this left several morphologic sequelae for us to find. There was ascites of 5,000 ml., there were

esophageal varices, and there was evidence of chronic congestion of the spleen, with enlargement of the spleen to 960 Gm. We found no point of bleeding in the gastrointestinal tract to explain that portion of the terminal episode. We did note scattered mucosal ecchymoses, and the best suggestion that we can make for the origin of the gastrointestinal bleeding would be diffuse hemorrhage from the mucosa of the stomach or bowel. We feel the cirrhosis and portal hypertension led to splenic enlargement and a secondary hypersplenism which explain the clinical findings of anemia, leukopenia, and thrombocytopenia.

I think we need to go into a bit more detail in regard to the bone marrow specimens which seem to have been the main factor in leading Dr. Kaung astray. The two aspirations which were reported as being moderately hypocellular appear to have been diluted by peripheral blood. There were, in fact, several cellular fragments of marrow, so that a complete aplasia or a completely fibrotic marrow could be ruled out on the basis of the marrow aspirations. The biopsy procedure was done twice, but there is only one report, despite the fact that the clinical protocol contains a suggestion that there were two of them. One biopsy was lost through a technical difficulty in the laboratory, and the biopsy that was reported was moderately hypoplastic and appeared hypocellular. However, it was not aplastic and certainly not fibrotic. This biopsy was taken about 2½ weeks before death.

Dr. Kaung: Did you say it was hypoplastic?

Dr. Longnecker: I am not in a position to argue that question at length. I shall just refer you back to the pathologist who originally read the biopsy, and also to Dr. Givler, who is quite interested in bone marrows. Each of those men said there was a moderate degree of hypoplasia or hypocellularity. I chose the most cellular portion of the biopsy when I took the photograph, and my doing so may help explain the apparent cellularity. We had several sections of marrow from the autopsy specimens. This was more cellular, and was interpreted as hyperplastic. There was evidence of erythropoiesis, and there were also primitive myeloid cells in the marrow.

Now to get to Dr. Hamilton's question regarding hyperchromatic nuclei. There are groups of small cells with hyperchromatic nuclei in the autopsy marrow, and it is this sort of cell, I think, that the pathologist saw in the biopsy. The interpretation was that these represented autolytic changes or postmortem artifacts in normoblasts.

Dr. Kaung: But this was a clinical finding. I don't think normoblasts of this type are that hard to recognize.

Dr. Longnecker: That was not on smear. That interpretation was on the section. I think it was just given descriptively in the write-up, and the cells were not called normoblasts.

Dr. Hamilton: The section from which that interpretation was made also was not obtained postmortem.

Dr. Longnecker: Yes, that's right. We feel these bone marrow findings, then, are all consistent with a diagnosis of hypersplenism. In the autopsy marrow, there was a suggestion of a maturation arrest in the myeloid series. That would fit the theory of humoral or hormonal depression of the marrow in hypersplenism. Perhaps the overall picture of the marrow would fit with the idea that the spleen secretes something which depresses marrow function and which contributes to splenic destruction of cells in creating pancytopenia.

The question of tolbutamide toxicity was raised. On the basis of timing, I think this can be ruled out as a primary factor. It is my understanding that tolbutamide was not initiated until after the picture of anemia and thrombocytopenia had been established.

The next problem that I'd like to approach is that of classifying the cirrhosis. Grossly, there was quite a difference in the sizes of the nodules. Some were quite small, whereas others appeared to be larger. Sections showed the same picture of irregularity of size of hepatic cell nodules, and irregularity in the width of the scars. Some scars were quite delicate, and some quite broad. Some portal areas were only minimally scarred, and some central veins were completely uninvolved by scarring. These findings of irregularity in size of nodules and size of scars, and the fact that some portal areas and central veins were uninvolved, led us to classify this liver morphologically as a posthepatic cirrhosis. The classification which I am using is the one that has been taught for a couple of years to the sophomores. It is essentially that which is given in Boyd's TEXTBOOK OF PATHOLOGY,* and it's somewhat streamlined here:

CLASSIFICATION OF CIRRHOSIS

- Portal cirrhosis
  - Nutritional
  - Post-hepatic
  - Post-necrotic
- Biliary cirrhosis
- Miscellaneous types
- Undetermined or mixed types

The group of portal cirrhoses contains (1) classic nutritional cirrhosis, which would be more finely nodular than the one which we see today; (2) posthepatic cirrhosis, which we think is the best classification for the present case; and (3) postnecrotic cirrhosis, in which there would be even greater areas of scarring and larger nodules. Miscellaneous types would include hemachromatosis, Wilson's disease and cardiac cirrhosis. There are also some cases which we cannot classify on the basis of their morphologic characteristics.

* Boyd, W. A.: A TEXTBOOK OF PATHOLOGY, SEVENTH EDITION, Philadelphia, Lea and Febiger, 1961, p. 797.

Dr. J. A. Clifton, Internal Medicine: Dr. Longnecker, why do you classify postnecrotic cirrhosis as a type of portal cirrhosis?

Dr. Longnecker: I think it's done because pathologists for years have used portal cirrhosis as a diagnostic term for nutritional cirrhosis, posthepatic, and also postnecrotic cirrhosis, so that a postnecrotic cirrhosis may have been called a portal cirrhosis in the past. I think that Boyd preferred to group these in an attempt to bring pathologists into some agreement. I don't think one can make a strong case for its being descriptively accurate.

In my opinion—and, I think, in the accepted opinion—infectious hepatitis can lead to what we call postnecrotic cirrhosis. A less popular opinion, but one which I also hold, is that a chronic low-grade or mild-infectious hepatitis can lead to the picture which we call posthepatitic cirrhosis.

Dr. J. M. Layton, Pathology: I doubt that infectious hepatitis leads to postnecrotic cirrhosis. The posthepatic type of cirrhosis may be the sequel.

Dr. Longnecker: Discussions of this subject, of course, often become confused because of variations in what the individuals mean by a given term.

Death was ascribed at autopsy to bacteremia or septicemia. We believe this conclusion is consistent with the clinical course. We did not find massive gastrointestinal bleeding, so we couldn't use that as an explanation. We did grow E. coli from blood, spleen and lung. In addition, we found a patchy colitis, with bacterial invasion of submucosa and muscularis. These were visible in the autopsy sections, and there was some leukocytic reaction to these bacteria, so that we believe it was an antemortem event. Leukopenia would form a suitable background for this form of bloodstream invasion.

Our anatomic diagnoses are portal cirrhosis, posthepatitic type, with esophageal varices, congestive splenomegaly and ascites; secondary hypersplenism, with pancytopenia; and bacteremia.

Dr. Hamilton: I believe the problem of interpreting a bone-marrow biopsy has come up in more than one CPC this fall. In each instance that I have in mind, there was an underlying thrombocytopenia. When thrombocytopenia is present, for whatever cause, the bone marrow aspiration smear will usually appear hypocellular. This artifact is to be expected. Somehow or other the thrombocytopenia appears to contribute to blood-vessel fragility, permitting a break in the vascular channels of the marrow which results in a leakage of blood that then is aspirated along with some of

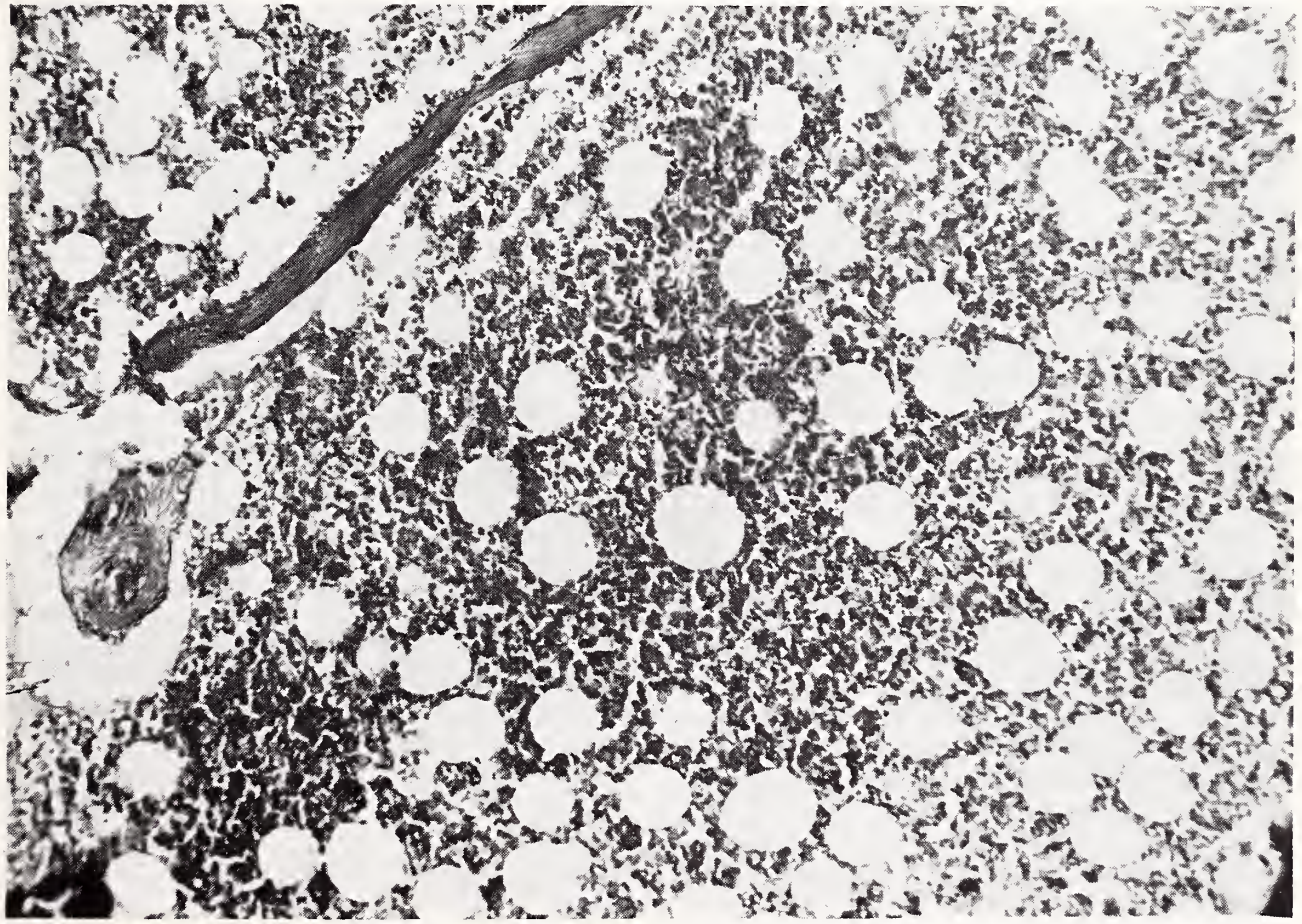


Figure 1. Photomicrograph made from vertebral marrow obtained at autopsy. The marrow is quite cellular. The identity of individual cells cannot be determined at this medium magnification.

the marrow. The sample thus is diluted with blood.

Dr. Longnecker implied, I believe, that one could have differentiated between aplastic and hypoplastic marrow by scanning these slides. I call attention to the fact that this smear was interpreted as being hypoplastic. There is a great deal of difference. There is no question that one should obtain a surgical biopsy of marrow if he is not satisfied with the estimate of cellularity or with the information obtained by aspiration biopsy. The surgical biopsy gives one a more complete picture. It entails a more expensive procedure, however, and most of the time the surgical biopsy yields no more useful information than is obtained from the ordinary marrow aspiration. In this instance, the block biopsy supported the suspicion that we were dealing with a hypocellular marrow. It took a complete autopsy to bring us around to the point of view that we really had a hyperplastic marrow.

Dr. Sheets: I think the statement to be made on behalf of Dr. Kaung is that from the report in the chart, the clinicians obtained the wrong interpretation on the state of the bone marrow. The entire picture changes when one sees the biopsy here on the slide. I don't think this is a hypoplastic marrow, just as Dr. Kaung doesn't believe that it is.

Dr. J. W. Smith, Pathology: I saw this slide, and I think it's pretty definitely hypoplastic. This shows a cellular area on the slide, but I think that most areas are less cellular.

Dr. E. D. Warner, Pathology: If the area shown was the most cellular one in the bone-marrow biopsy, I think that the marrow was correctly interpreted as somewhat hypocellular for sternal marrow.

Dr. Hamilton: Under these circumstances, Dr. Warner, from what area do you think a biopsy should have been taken?

Dr. Warner: A vertebral-body biopsy probably would have been the best, but that's not easy to get.

Dr. Sheets: I should like to state that the clinicians tended more toward a diagnosis of myelofibrosis than anything else, although they were uncertain. The other diseases mentioned this morning were also considered.

In summary, then, I should like to emphasize that this patient shows the term "Banti's syndrome" not to be actually helpful in revealing the unfolding events in a patient with cirrhosis. The primary disease which afflicts all these people and which was called Banti's disease in the past, is cirrhosis of the liver or some other condition which results in a high portal pressure and a high pressure in the spleen. If one keeps this in mind, the only difference between this patient and the one who has what we usually think of as cirrhosis is that the emphasis here is on the hemotologic picture, rather than on the liver.

Dr. F. P. Aleu, Pathology: For the benefit of the students and many others of us, I think we should identify the cells with hyperchromatic nuclei. I, for one, think they are normoblasts.

SUMMARY OF NECROPSY FINDINGS

ANATOMIC DIAGNOSES

Portal cirrhosis with esophageal varices, ascites, and splenomegaly
Pancytopenia
Bacteremia
Diabetes mellitus (clinical)

STUDENTS' DIAGNOSES

Traumatic rupture of spleen
Banti's syndrome (congestive splenomegaly)
Portal cirrhosis
Esophageal varices

DR. KAUNG'S DIAGNOSES

Myelofibrosis
Gastrointestinal tract bleeding (cause undetermined)
Diabetes mellitus

A Warning to High School Pole-Vaulters

High school boys who are anxious to vault spectacularly by using the new fiberglass poles are likely to choose lighter ones than their weights require, the AMA Committee on the Medical Aspects of Sports and the National Federation of High School Athletic Associations have warned. Too light a pole may snap, and as a result the youngster may be impaled, or allowed to fall before reaching the pit or mattress that has been placed beyond the bar.

Each fiberglass pole is rated by its manufacturer for a definite weight limit. The makers warn that poles must not be overloaded by even as slight an amount as five pounds!

Most of today's 16-foot vaulters use poles which have been specified for men weighing five pounds *more* than they do, to get the pole-strength they need for the kick to get over the top, the statement continued. These vaulters know how to put extra bend in the pole, but the average high school vaulter doesn't have that skill, and actually he isn't going to a height that requires the whip action.

"Therefore, there is no excuse whatsoever . . . for the coach to allow his vaulters to use a pole lighter than that specified for their weights," the statement concluded. "Moreover, the athlete must share this responsibility by respecting the need for the fundamentals of a progressive training program, rather than seeking glamorous, unsound shortcuts to competitive success."

The two groups also recommend conscientious care of fiberglass poles to avoid breakage.



THE FUND-RAISERS AND THE CITIZEN

Both the layman and the physician are frequently asked for contributions to organizations that carry on independent campaigns to raise money for research or for the care of patients with certain diseases. Originally, the Community Chest or United Campaign in each large town or city was intended to include not only social service agencies but also the numerous special-disease groups in one concerted effort at soliciting voluntary contributions. There were several advantages to that arrangement. The citizen was to be called upon for such a gift only once a year; the causes with minimal popular appeal were to benefit along with the more attractive ones; and fund-raising expenses were to be kept to an absolute minimum.

Unfortunately, a considerable number of charities never joined the United Campaigns, or for various reasons withdrew, one by one, with the result that there now are a sizable number of individual drives, conducted at intervals throughout the year.

The American people are generous in their support of worthy causes, but their convenience ought to be considered and they are entitled to have some reliable information to help them give intelligently. Councils of social agencies or similar groups should be composed of experts and should serve as their proxies in gathering such data. Essential facts should then be provided to prospective donors, regarding each agency, so that giving need not be done blindly or predicated merely upon emotional appeals.

The first bit of information which is pertinent to intelligent giving is whether the agency in question duplicates the services of other organizations. The amount spent for fund-raising and for administration, the percentage of income spent locally and the percentage sent to the national office are other questions which should be answered. It would likewise be helpful for the donor to know the percentage of income devoted to actual patient care, and that spent on research.

Unfortunate experiences in the past have made contributors anxious to have such accurate accountings. Recently the attorney general of a neighboring state brought suit against a national health organization to prohibit it from soliciting funds in his state. His action was prompted by the fact that only 13 per cent of the money collected had been used for the care of patients and for research, and approximately 87 per cent had been spent for administration and fund-raising.

Perhaps organized medicine has an obligation to gather and disseminate facts, or to provide wise counsel, regarding health agencies that rely upon contributions. In any event, the multiplicity of independent appeals for support is placing the continued success of both the United Campaigns and the non-participating agencies in serious jeopardy. Many thoughtful people have already become reluctant givers.

EVALUATION OF CORONARY DILATORS

Of unusual interest is a report by a group from the Department of Medicine and Radiology, Hahnemann Medical College, Philadelphia, on the subject of an evaluation of coronary dilators by means of coronary arteriography.* In the past, the ability of certain drugs to increase the caliber of the coronary arteries has been appraised through experiments on preparations of the isolated heart and in anesthetized animals. The study from the Hahnemann Hospital reported the results of injection of radiopaque material into the coronary arteries of living men, and visualization by serial or cineradiography.

Two technics of visualization of the coronary arterial system were used. One consisted of flushing the root of the aorta with radiopaque material and thereby filling the coronary arteries simultaneously. In the second method, the opaque material was injected directly into each coronary artery. Electrocardiographic monitoring was carried out during each procedure.

Studies of 20 patients, ranging in age from 39 to 64 years, were reported. Fourteen of the group were males. All had well-documented coronary heart disease, 16 had experienced an acute infarction, and four had unmistakable angina pectoris with definite electrocardiographic changes at rest.

Visualization of the coronary arteries by injection of the radiopaque material into the root of the aorta was done in six patients, and recording was done by rapid serial radiography. Prior to the administration of any drug, control studies were done to determine the effect of the radiopaque material itself on the caliber of the coronary arteries.

In 14 patients, the coronary arteries were injected directly, and the visualization was recorded by cineradiography. First, the injection was made into the right coronary artery, and then a similar procedure was done on the left coronary. The effect of the radiopaque material on the caliber of the coronary arterial system was determined by repeated control injections.

Glyceryl trinitrate (nitroglycerin) was given sublingually to four patients in a dose of 0.4 mg. In each patient, visualization was obtained by selective injection of each coronary artery five minutes after complete absorption of the tablet.

* Likoff, W., Kasparian, H., Lehman, J. S., and Segal, B. L.: Evaluation of "coronary vasodilators" by coronary arteriography. AM. J. CARDIOLOGY, **13**:7-9, (Jan.) 1964.

Editorials continued...

Erythrityl tetranitrate (Cardilate) was given sublingually to 11 patients in doses of 5 to 15 mg. Twenty minutes after absorption, visualization was accomplished by aortic-root injection in six patients and by selective coronary injection in five of the group. One of the newer drugs, segontin, was given intravenously into the aortic lumen, in 10 to 20 mg. doses, to five patients, and was followed, in five minutes, by selective arteriography. Segontin is thought to have sympathicolytic, adrenolytic and sedative actions, and is one of the many different drugs which have been proposed for the treatment of angina pectoris.

Comparative studies of the radiographic records were made without knowledge as to whether a drug was or was not administered, and if a drug had been given, which one was used. The radiopaque material did not appear to have any effect upon the caliber of the coronary arteries. Transient changes in the direction of the T waves were observed in certain leads of the electrocardiograms when selective injection was employed. Following the administration of glyceryl trinitrate and erythrityl tetranitrate, a perceptible increase in the caliber of the coronary arteries was observed in each patient given those drugs. The injection of segontin into the aorta produced no consistent changes in the diameter of the lumen of the coronary arterial system.

According to the authors, the study was unusual in that vasodilatation was observed to occur in patients with unmistakable stenosing coronary atherosclerosis. The increase in the caliber of the vessels occurred in both major and minor coronary arteries, and in normal as well as in atherosclerotic segments. The response was found to be inversely proportional to the degree of stenosing atherosclerosis. The authors point out, however, that these results do not imply that the increase in the caliber of those vessels is the mechanism by which the relief of pain is achieved, in coronary insufficiency, nor is there any evidence that it corrects the basic pathophysiology of coronary insufficiency. The precise manner in which the nitrates relieve pain in angina pectoris is still unknown.

Apropos of the pharmacologic action of glyceryl trinitrate, an editorial by Norman Brachfeld** points out that the drug can no longer be considered a simple vasodilator. Numerous studies have demonstrated that it has extensive pharmacologic activity. The improved technics of histochemistry, enzymology and hemodynamics have already proved it to be a potent agent with far-reaching effects on cellular respiratory energy, metabolism and myocardial mechanics. According to Brachfeld, "Further investigation of the biochemical metabolic effects of this drug may provide the answer to the riddle of its efficacy, and hopefully, as a corollary to these findings, provide information as to the mechanism of angina itself."

THE RATIONAL USE OF ANTIBIOTICS

In a symposium on the subject of pediatric surgery published in the March, 1964, issue of the AMERICAN JOURNAL OF SURGERY, Eichenwald and Shinefield,* of the New York Hospital-Cornell Medical Center presented a splendid discussion of the rational use of antibiotics. Every physician who cares for infants and children will find that it provides intelligent guidance in a field which is controversial and which, on occasion, is extremely perplexing.

The authors preface their consideration of the subject by pointing out that the average physician assumes our knowledge of antibiotic therapy and of laboratory technic has advanced to the stage where a completely rational approach is possible. The average doctor also assumes that in making a decision about whether or not to give an antimicrobial agent to a particular patient he can usually if not always be logical and rational. They emphasize that neither of these assumptions is correct. Antimicrobial agents are usually selected on the basis of unreliable laboratory data, which are either interpreted improperly or accepted blindly. Too often, the physician has been influenced by advertising copy, or he follows a standard plan of treatment uncritically.

Illustrative of the irrational use of antibiotics is the rather common pre- and postoperative administration of such agents, despite the numerous articles which have indicated that the prophylactic administration of antibiotics fails to prevent wound sepsis and, in fact, is associated with an increased incidence of infection and iatrogenic disease. According to the authors, there is no significant record in the medical literature which supports the use of these drugs prophylactically in surgical practice.

They also point out that another common practice is the use of combinations of antibiotics, such as erythromycin and chloramphenicol, and penicillin and tetracycline. A combination of antimicrobials has an established place in the treatment of a few diseases. Among these are tuberculosis, meningitis of undetermined etiology and certain infections in the newborn. In general, however, the combination of antibiotics does not improve the efficacy of therapy or the speed of response, and it does not inhibit the emergence of drug resistance. In the treatment of staphylococcal infections, it is a very common practice to combine

** Brachfeld, N.: Coronary vasomotor response to pharmacologic agents (Editorial). AM. J. CARDIOLOGY, **13**:1-6, (Jan.) 1964.

* Eichenwald, H. F., and Shinefield, H. R.: Rational use of antibiotics. AM. J. SURGERY, **107**:518-522, (Mar.) 1964.

erythromycin and chloramphenicol, despite the fact that there is no evidence to show that this type of treatment is any more effective than erythromycin alone, and there is no proof that it prevents the development of resistant strains.

Another common error in the use of antibiotics is the tendency to use data obtained in adults in the treatment of younger patients. It should be remembered that the course of a given infection may be radically different in children from that seen in adults. Emphasis is given to the fact that a specific antimicrobial agent may prove unpredictably toxic to an infant or child, and paradoxically, certain drugs can be administered safely to babies that are too dangerous for use in adults. It must be recognized that certain antibiotics appear to be more effective in patients of one age than they are in those of another.

The efficacy and the toxicity of some of the antimicrobial agents in infants and children have been studied carefully. The authors briefly discuss the resultant data and relate their own experience with the use of these drugs.

According to the authors, if a staphylococcus is resistant to penicillin, the most potent agent available is bacitracin. Particularly in infants under one year of age, in whom staphylococcal infections are quite frequent, bacitracin has proved unusually effective and virtually nontoxic when used in a dose of 1,000 units per kilogram of body weight per day in two intramuscular doses 12 hours apart. The use of the drug in adults has been restricted because of nephrotoxicity. In over 100 infants treated with bacitracin during the past five years, the authors report a mortality of less than five per cent, and in a prolonged follow-up study of this group of patients, no irreversible toxic effects have been observed.

Chloramphenicol has had wide use in both internal medicine and pediatrics because of its ease of administration and its effectiveness in the treatment of most of the common forms of meningitis. The New York group contend that the excellent reputation that chloramphenicol has enjoyed for wide-spectrum potency is not entirely justified. Its efficacy in meningitis is attributed to its high concentration in the spinal fluid, rather than to its superior potency. With the exception of salmonella and rickettsial conditions, it possesses no clear-cut superiority in the treatment of infections. Many strains of E. coli are resistant to the drug, and though staphylococci may be susceptible to chloramphenicol in the laboratory, the results have been disappointing in practice. The hazard of serious hematologic disorder must be kept in mind, and cardiovascular collapse in infants has been described following its use.

Colymicin is effective in the treatment of pseudomonas infections and of infections with some other gram-negative organisms. It is used particularly in the treatment of infections of the urinary tract. In infants, the effective dose is 5 to 6 mg. per kilogram per day, and the only toxic effect of short-term treatment has been a transient albuminuria. Streptomycin or kanamycin has proved more effective in the treatment of systemic E. coli infections if the organisms in question are susceptible.

Erythromycin is, in general, effective against the same organisms as penicillin, and it is very significant that it is effective against certain strains of staphylococci that are pencillin-resistant. It is one of the least toxic antibiotics, and in chilDen it is employed in a dose of 25 mg. per kilogram per day, divided into four equal doses. The authors use erythromycin in the treatment of children only mildly or moderately ill with staphylococcal infections, for it is far less effective than bacitracin or some of the newer semi-synthetic penicillins.

Kanamycin belongs to the neomycin-streptomycin family, and is effective against a wide range of organisms—gram-positive, gram-negative and acid-fast bacteria. At the New York Hospital-Cornell Medical Center, it was found that this drug is effective against almost all of the strains of E. coli encountered in the New York area—even those which were resistant to streptomycin. Besides being effective against E. coli, it is active against salmonella, aerobacter and many strains of proteus. Though kanamycin has significant toxicity in adults, its use in young infants has been accompanied by little or no hazard. The drug has been given in a dose of 7.5 mg. per kilogram every 12 hours for a period not to exceed 10 days. The authors are impressed with the efficacy of this drug in the treatment of infections caused by gram-negative organisms in infancy. Follow-up studies of infants treated in the neonatal period have shown no evidence of renal or auditory disturbances.

Furadantin is absorbed from the gastrointestinal tract and is then rapidly excreted by the kidneys so that serum levels of the drug remain low. The drug is useful in the treatment of infections of the urinary tract, particularly in older children and adults. The value of the drug in infants has not been assessed, but from the data available it is suggested that toxic effects would probably result in a small proportion of patients of that age group.

Novobiocin is used in the treatment of mild and moderately severe staphylococcal infections caused by organisms resistant to penicillin and erythromycin. It is also used in the infections of the urinary tract caused by susceptible strains of E. coli and proteus, and in the management of diarrhea caused by E. coli that are resistant to neomycin, and occasionally in patients with systemic proteus infections. In an appreciable number of infants treated with novobiocin, there is an elevation of the serum bilirubin level. In older

Editorials continued...

children, toxic manifestations are quite frequent, consisting of rashes, fever and, occasionally, signs of liver toxicity.

Physicians everywhere are familiar with the dramatic effects of penicillin in the treatment of infections caused by gram-positive organisms. Unfortunately, they are also familiar with the hypersensitivity reactions which sometimes accompany its use, and with the development of bacterial strains that are penicillin-resistant. Of special interest, therefore, are the so-called antistaphylococcal penicillins which have recently been added to the physician's armamentarium. The authors point out that the high promise of these new drugs has not been fully borne out clinically. It is thought that disappointment with these drugs is due to the fact that the tissue levels sustained are very low, and the new pencillins are more toxic than the original molecule, so that the amount of the drug that can be given with safety is limited. Nephrotoxicity and depression of the bone marrow have been reported. In infants, the dose is 40 mg. per kilogram every six hours, and 25 mg. per kilogram every six hours for older children. The therapeutic value of these agents is less than that of bacitracin in staphylococcal infections in infants. In older children, the newer penicillins have proved very useful, for in that age group bacitracin is more toxic. The authors have found the oral administration of oxacillin preferable to the injectable methicillin.

Streptomycin has been especially effective in the treatment of tuberculosis and of infections due to a variety of gram-negative organisms. Unfortunately, many strains of E. coli have acquired resistance to streptomycin, and it is for this reason that the authors prefer kanamycin in the treatment of these infections in infants. For infections of the urinary tract and for peritonitis in older children, streptomycin continues to be particularly valuable. The dose should not exceed 40 mg. per kilogram per day, and treatment should not be continued for more than 10 to 12 days unless the disease being treated is tuberculosis.

The sulfonamide group of drugs should not be given to the newborn or to premature infants because they may cause an increased incidence of kernicterus. They are extremely helpful in the treatment of urinary-tract infections in older children, and the sulfonamides are the treatment of choice in meningococcal infections.

The tetracycline group of drugs include Aueromycin, Terramycin, Declomycin, etc. These drugs possess very similar antibacterial actions and have been shown to develop almost complete cross resistance. They should be given orally or intravenously. When they have been given intramuscularly, the resultant blood levels have been erratic. When administered by mouth, their absorption is related to the amount of liquid ingested. Maximum absorption of the drug occurs with an intake of at least 1 ml. of water per milligram of the drug. The authors point out that in infants the rate of absorption and elimination of the tetracyclines is unpredictable, so that too low or excessively high blood levels may occur. Adequate information is unavailable on the dosages of these drugs that should be used in treating infants. Undesirable consequences from the use of tetracyclines in children consist of the deposition of the drug in bones and dental enamel, and a decrease in bone growth, so that prolonged or repeated use in youngsters is probably unwise. The tendency of the tetracyclines to destroy the normal bacterial flora of the skin and the mucous membranes, thus permitting an overgrowth of other highly resistant organisms, is particularly undesirable in patients in whom surgery is contemplated or who have recently undergone surgery.

The authors conclude their article with a paragraph which should serve as a guide to every physician who has occasion to administer antibiotics: "The intelligent use of antimicrobial agents depends upon knowledge of the activity of various chemotherapeutic drugs, their relative effectiveness, and toxicity in a variety of infectious conditions in patients of various ages, and on the proper utilization and interpretation of laboratory data. Finally, the physician must clearly differentiate in his own mind between the desire to do something truly useful for the patient, and the magic of administering a drug; it is often better to do nothing than to use these potent and dangerous agents in an empiric or blind fashion."

TUBERCULOSIS HAS NOT BEEN ERADICATED

A report of an experience in the high school in a Tennessee town of 8,000 people is a dramatic reminder that tuberculosis has not been eliminated as a health hazard, and that it is an infectious disease that continues to challenge health authorities everywhere.

Bryant, Hutcheson and Dillon* conducted an epidemiologic investigation following the diagnosis by a private physician, in February, 1962, of far-advanced tuberculosis with multiple cavities in a 17-year-old white male. The boy's first symptoms had occurred during the previous October, but he had continued in school until late January, when he had had an acute illness thought to be influenza. X-ray studies at that time established the diagnosis of tuberculosis. Though he was in his

* Bryant, W. F., Hutcheson, R. H., and Dillon, A.: Epidemiological investigation of tuberculosis in Tennessee high school following discovery of student case. J. TENNESSEE M. A., 57:41-44, (Feb.) 1964.

second year of attendance at his high school, the boy was still classified as a freshman and consequently had not been given a tuberculin test during the previous December, when all tenth-grade students were tested according to the usual schedule.

After learning the true nature of the boy's illness, the local health department and the school authorities decided to do tuberculin tests on the entire student body, even though the tenth graders had had routine skin tests in December and there had been no unusual results. The Mantoux test, with 0.1 mg. of O.T., was done on 875 students and 13 teachers. The tests were read after 48 hours, and the results were recorded in millimeters of induration. Of the 888 persons tested, 313 had reactions 5 mm. in diameter, and 277, or 31.2 per cent of the total number of students tested, had reactions measuring 10 mm. or more in diameter. An induration of 10 mm. or more constitutes a positive test. The finding of over 30 per cent positive reactors was in great contrast to the results of testing the previous December, when less than 3 per cent of the tenth graders had been found to be positive.

The ten-fold increase in the level of tuberculin sensitivity among the students was startling, but the incidence of conversion from tuberculin-negative to -positive in the group of tenth-grade students tested only three months previously was downright alarming. Of 195 tenth-grade students who had been tuberculin-negative in December, 49 or 25.1 per cent had reactions of 10 mm. or more when retested in February.

Thinking it improbable that one student with active tuberculosis could have altered the tuberculin sensitivity of such a large group of youngsters in such a short period of time, the authorities took chest x-rays of every student and every member of the school staff. No additional active cases of either primary or reinfection tuberculosis were found. The failure to find additional cases prompted further epidemiologic study.

Additional investigations revealed that the technic of administering the Mantoux test had been faultless, and it was determined that the particular lot of tuberculin had not been contaminated. A community survey failed to reveal any common source of infection of the high-school age group.

Classification of the reactors by school class and by sex pointed to the fact that the one sick boy had been the source of the infection. The freshman class had the highest percentage of reactors, 48.6 per cent, followed by the sophomore class, with 26 per cent. The two upper classes had about equal numbers of positive reactors, some 18 per cent. Among the reactors in the freshman class, 65 per cent were boys.

Of 550 students who had had only casual contacts with the ill boy, only 20.7 per cent were reactors. In the group who had had moderate contacts, 35 per cent had positive reactions. The group of students who had had close contacts with him were found to have 90 per cent positive Mantoux tests.

After a consideration of the epidemiologic findings, it was concluded that this had been an airborne outbreak of tuberculous infection, and that one case of far-advanced tuberculosis had been responsible for the high level of tuberculin sensitivity among the students, and for the high rate of conversion to tuberculin-positive in students with previous negative reactions.

None of the exposed students were given isoniazid therapy, not even those who had been tuberculin-negative in December and were found to be tuberculin-positive in February. At the end of the year, it was found that the boy's sister and five other students had developed clinical reinfection tuberculosis during the year. Of the five students who became ill, one had had casual contact with the index case; three had had moderate contact; and one had had close contact with him.

As a consequence of the reduced incidence of tuberculosis, an increasing proportion of young people have had no exposure to tuberculosis, are tuberculin-negative, and possess relatively little immunity to the disease. The authors point out that prior to the present low level of tuberculin sensitivity in the population, this episode probably would have gone undetected.

They conclude their report with the admonition: "Until tuberculosis is eradicated, or until more is learned concerning the epidemiology of the disease, continued rigid control measures, even in the younger segments of the population, seem indicated."

From this experience, it is apparent that tuberculosis is still a disease to be reckoned with, and that periodic testing of school students is a sound practice.

TINTED WINDSHIELDS AND EYEGLASSES ARE HAZARDOUS AT NIGHT

The AMA Council on Occupational Health "condemns the use of tinted lenses and tinted windshields as aids in night driving" for these reasons:

- The use of any "night-driving" lens or windshield, whether tinted, reflecting or polarizing, reduces the light transmitted to the eye and renders the task of seeing at night more difficult.
- The source of glare in night driving is the contrast between the headlights of oncoming cars and the darker surroundings. The use of tinted lenses or windshields does not reduce the contrast, but reduces the intensity of illumination from both the headlights and the surroundings, thereby impairing vision.
- There is no scientific evidence to support any claim that the use of tinted lenses or windshields improves night vision.

In Memoriam

MARTIN I. OLSEN, M.D.
1877-1964

Dr. Martin I. Olsen, the organizer and first president of Blue Shield of Iowa and the retired vice-president and medical director of the Central Life Assurance Society, was a leader whom physicians and layman throughout the state will long remember. He held Blue Shield together almost single-handedly through its formative years, and it is safe to say that were it not for him, we would have no Blue Shield in Iowa. For many years, he also served as a vice-president of the Blue Cross of Iowa hospital insurance program. His work on behalf of Central Life began when he joined the firm's medical department at Madison, Wisconsin, in 1913. He joined its home-office staff in Des Moines, four years later, as medical director, was elected to its board in 1920, was made vice-president in 1932, and served it in that capacity until his retirement in 1959. His associates at Central Life recall that he helped them through many difficult times, such as the mutualization of the company, the problems resulting from two world wars, and the even more troublesome crises of the Great Depression.


M. I. Olsen, M.D.

Dr. Olsen served a term as vice-president of the Iowa Medical Society, and was presented its Merit Award for Distinguished Service to Medicine in 1951. The organizations of which he was a member include the Polk County Medical Society, the American Medical Association, the American College of Physicians, the Board of Life Insurance Medicine, and the Des Moines Library Medical Study Club.

A native of Herscher, Illinois, Dr. Olsen had his undergraduate training at Luther College, Decorah, Iowa, and many years later was given a Doctor of Letters degree by that school. He took his M.D. at Rush Medical College, Chicago, in 1905, and was elected to Alpha Omega Alpha. He had 18 months of internship at Cook County Hospital. Thereafter, he did general practice in Chicago and served as an instructor at Rush for several years, and then, in 1911-1912, he did graduate study in Vienna and Berlin. On his return to this country, he engaged in general practice in Madison until he joined the staff of Central Life Assurance Society.

Dr. Olsen died of a stroke, on April 2, 1964, at Worrell Hospital, Rochester, Minnesota. His survivors include his widow, Aagot; a son, Dr. Arthur M. Olsen, of the Mayo Clinic staff; two sisters, Miss Anna M. Olsen, of Ames, and Mrs. Gerhart H. Dahl, of Herscher, Illinois; and six grandchildren.

An excellent physician and a gentleman of quiet dignity, Dr. Olsen had a wealth of deep friendships. His pioneering work in the field of prepayment health care through Blue Shield and Blue Cross constituted an outstanding contribution to medicine, the insurance industry and the people of Iowa.

—GEORGE G. YOUNG, M.D.

Letter to the Editor

Dear Mr. Editor:

I find it difficult, indeed, to put into words the gratitude I feel to you, Mr. Editor, and to all the others who contributed to the publication of the special May issue of the JOURNAL honoring me.

I assure you I was completely surprised. The first inkling I had was when I discovered the very attractive reprint among the material in the packet so thoughtfully supplied us by Dr. Fisk at our April 11 and 12 Raymond Blank Alumni Association annual meeting. Not until several days later, when the meeting was over, did I have time to read the issue in its entirety, and it was only then that full realization came to me of the great honor my colleagues had paid me.

I appreciate greatly the kind words said about me at the beginning of the issue and in your editorial remarks. It was in 1921 that I came to Iowa from my sheltered New England environment and not once in the intervening 43 years have I regretted following Horace Greeley's advice of "Go West young man."

It has been a privilege and an incentive to have been a member of the Iowa Medical Society all these years, and to have had the opportunity to participate in some degree to its progress and ever expanding activities.

I would be less than truthful if I did not confess to a feeling of "parental" pride in the excellence of the papers in this issue contributed by former residents at Blank. To have had a share in the educational preparation for pediatric careers of the many young men and women who have gone out from Blank to all parts of the country yields a reward not to be reckoned in material values. It is they who have made my own pediatric career a most enjoyable and satisfying experience.

In closing, as at the beginning, I still find myself searching for words to convey my deep appreciation for the honor you have accorded me. I can only say "thank you" from the bottom of my heart.

Most sincerely yours,

LEE FORREST HILL, M.D.

June 1, 1964.

President's Page



The segmentation of organized medicine, because of the different purposes and interests of GP's, specialists, medical researchers, and medical educators, invites chaos and courts disaster. Such disunity had blue-printed the Belgian physicians' predicament long before the apparent crisis.

Their ill-conceived demonstrations were as futile —though as understandable—as the protestations of those condemned to serfdom, and gained them only the hollow victory of future arbitration with masters of deceit.

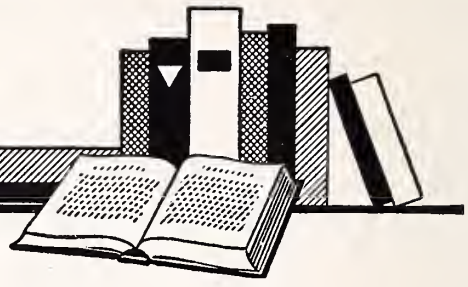
Faulty planning, together with freak circumstances and the propaganda issued by those who invented the strike technique, soiled the physician's image the world over.

The conscription of Belgian physicians affirms the incompatibility of freedom and socialism, for one is the antithesis of the other.

Otis D Wolfe

President

THE JOURNAL *Book Shelf*



BOOK REVIEWS

CURRENT THERAPY 1964, edited by *Howard F. Conn,* M.D. (Philadelphia, W. B. Saunders Company, 1964. $13.00).

The sixteenth edition of CURRENT THERAPY was compiled with the cooperation of some 300 contributors and uses the same format as the previous editions. The authors assume that a diagnosis has been made, and detail the method of treatment they prefer in outline form. If there is controversy about accepted methods of treatment, more than one method is presented. No detailed effort is made to give the rationale of the treatment, for approximately 400 subjects are covered from all fields of medicine.

One section in the book gives the normal values of many laboratory tests, and another deals with common poisons and poisonous components of common household products. The present edition has added a section on parenteral fluids and the necessary method of calculating the amount of fluids and ion components.

This book is valuable for making the newest acceptable methods of treatment available in an updated outline form.—*John Hess, Jr.,* M.D.

THE LUNG AND ITS DISORDERS IN THE NEWBORN INFANT, by *Mary Ellen Avery,* M.D. (Philadelphia, W. B. Saunders Company, 1964. $7.50).

This is the first in a series of monographs which will be published by W. B. Saunders Company on "Major Problems in Clinical Pediatrics" under the consulting editorship of Dr. Alexander J. Schaffer, author of DISEASES OF THE NEWBORN.

The initial volume certainly gets the series off to an excellent start. Dr. Avery, the author, is a well known expert in her field, and the subject she writes about—the lung in the newborn—is of great interest to many people, including obstetricians, pediatricians and general practitioners.

Contents of the book are discussed under three main headings: (1) "Normal Development and Physiology of the Fetal and Neonatal Lungs"; (2) "Disorders of Respiration in the Newborn Period"; and (3) "Artificial Respiration." There are 19 chapters in all, and an extensive list of references is appended. Roentgenograms of high quality are freely used to illustrate the wide variety of disease conditions she presents, and there are many tables and drawings to facilitate the reader's understanding.

Two of the chapters will be of especial interest to pediatricians. One, Chapter 10, devotes some 27 pages to what is known and what is not known about hyaline membrane disease. It is refreshing to find that the author is not dogmatic about championing one etiologic possibility over another or of recommending one method of treatment over another. All current concepts in each of these categories are presented, and the strong and weak aspects of each are fairly dealt with. In the summary, she outlines briefly her own choice of therapy, but expresses the hope "that others will systematically pursue other methods of prevention and treatment."

Chapter 17 discusses asphyxia at birth, and methods of resuscitation. The reader will find clear-cut and helpful suggestions on the management of this emergency situation.

This is an excellent book which can be studied with profit by everyone who deals with newborns.—*Lee F. Hill,* M.D.

BUNNELL'S SURGERY OF THE HAND, FOURTH EDITION, revised by *Joseph H. Boyes,* M.D. (Philadelphia, J. B. Lippincott Company, 1964. $26.50).

This classic textbook, which Sterling Bunnell presented in three editions before his death in 1957, has now been revised by Joseph H. Boyes and published in a fourth edition by the J. B. Lippincott Company.

No one is better qualified for this discriminating task than Dr. Boyes, for he was an associate of Dr. Bunnell's and has had great experience in surgery of the hand in both military and civilian life.

The fourth edition is described in the preface as a complete revision, but much if not most of the basic material contained in the third edition still remains. In addition, new material has been written by Dr. Boyes, and it is illustrated by many new photographs and drawings. Technics developed within the past eight years—the use of the neurovascular pedicle, tendon transfers and the surgical treatment of rheumatoid arthritis—are all included.

It is to be noted that the original style of the book is retained, although there has been some rearrangement of material. The extensive bibliography presented in previous editions has been maintained and added to.

Dr. Boyes' eminent qualifications for this difficult assignment consist not only of his unique experience in hand surgery, but also of his practical and direct approach to surgical problems. For these reasons, all surgeons seeking information in this field can take Dr. Boyes' statements quite literally.—*J. M. Bruner,* M.D.

SYNOPSIS OF EAR, NOSE AND THROAT DISEASES, SECOND EDITION, by *Robert E. Ryan,* M.D., *William C. Thornell,* M.D., and *Hans von Leden,* M.D. (St. Louis, The C. V. Mosby Company, 1963. $7.50).

Because of its handy size alone (5½" x 7" x 1"), this book should find a ready place either on the doctor's

desk or in his library. In its 425 pages can be found a truly remarkable synopsis of ear, nose and throat diseases, together with technics of diagnosis and treatment.

The volume is divided into four parts. The first of them, "The Ear," is written by William C. Thornell. The second part, "The Nose and Paranasal Sinuses," is the work of Robert E. Ryan. The third part, "The Pharynx," and the fourth, "The Larynx," are written by Hans von Leden. Each part begins with a brief but concise review of the anatomy and physiology. Simple routine examination of the part is discussed in enough detail to help the reader develop satisfactory habits in surveying these important structures of the body. Common disorders affecting the ears, nose and throat are discussed in relation to their causes, pathologies, symptomatologies, prognoses and therapies. These discussions are all very much to the point, developing a maximum number of concepts and ideas with a minimal number of words.

Of special interest are the outlines at the ends of the chapters, presented by these fine clinicians and excellent teachers. Surgical procedures are described. The diagrams are clear and complete, and the paper and printing make the book easy to read.

The authors stated in the preface to their first edition that this book was written to serve as a handy guide for the busy family physician, the intern and the medical student, and as a ready reference for nurses and speech or voice pathologists. To this reviewer, it would seem that it would also be an excellent reference for the busy otolaryngologist because it is superbly organized and makes readily available a large body of knowledge any part of which he may need on a moment's notice.—*Byron M. Merkel,* M.D.

THE CARE OF THE GERIATRIC PATIENT, SECOND EDITION, edited by *E. V. Cowdry,* M.D. (St. Louis, The C. V. Mosby Company, 1963. $11.85).

This book is interesting reading for the geriatrician, and especially for the physician who wants to increase his interest in geriatrics. The list of contributors is impressive. The medical contributions appear factual and are a good review of the diseases of the elderly. However, the purpose and the size of the volume placed limits on detail. I appreciate that the editor stressed the continuity in geriatric medical care. Dr. Paul Starr has an excellent review of the geriatric medical check-up, and stresses that it is to be performed on a regular basis.

The discussions of economics and environmental aspects of the aged are very interesting, and involve some controversial issues on which the reader may disagree with the authors.

There is a good discussion of hospitalization and nursing homes. There is a need for continuing medical care for these patients so that individuals likely to respond to rehabilitation may be recognized. The objectives and procedures of a coordinated home-care service are described.

In summary, this book points up the problems in the medical care of the elderly, and offers answers for some of them.—*Wm. J. Morrissey, M.D.*

THE IMMUNOLOGICALLY COMPETENT CELL, edited by *G. E. W. Wolstenholme* and *Julie Knight.* Ciba Foundation Study Group No. 16. (Boston, Little, Brown and Company, 1964).

This small book is a collection of six papers delivered at a conference in 1963 and dealing with the nature and origin of the immunologically competent cell. Accompanying these six papers are transcripts of the discussions of them that took place at the conference, and a bibliography. The discussants were some of the leading authorities on modern immunology, including Dr. Macfarlane Burnet and Dr. P. B. Medawar.

The publication is designed to point up some specific facets of homografts, cytophilic antibody, the role of thymus, and immunologic competence in the fowl.

The presentations assumed a working knowledge of modern immunologic theory on the part of the listener or reader, and thus an interest in this book will be restricted to students and specialists in this field.—*John W. Green, Jr.,* M.D.

BOOKS RECEIVED

FITNESS FOR THE WHOLE FAMILY, edited by *Paul Dudley White,* M.D. and *Curtis Mitchell* (New York, Doubleday & Company, Inc., 1964. $4.95).

TEXTBOOK OF OTOLARYNGOLOGY, SECOND EDITION, by *David D. DeWeese,* M.D. and *William H. Saunders,* M.D. (St. Louis, C. V. Mosby Company, 1964. $9.25).

MARRIAGE COUNSELLING IN MEDICAL PRACTICE, edited by *Ethel M. Nash, Lucie Jessner,* M.D. and *D. Wilfred Avse,* M.D. (Chapel Hill, The University of North Carolina Press, 1964. $8.00).

THE CRYSTAL ARROW, by *Felix Marti-Ibanez,* M.D. (New York, Clarkson N. Potter, Inc., 1964. $6.00).

HANDBOOK OF LEGAL MEDICINE, SECOND EDITION, by *Alan R. Moritz,* M.D. and C. *Joseph Stetler,* LL.B. (St. Louis, C. V. Mosby Company, 1964. $5.75).

DISORDERS OF LANGUAGE, edited by *A. V. S. de Reuck* and *Maeve* O'Connor for Ciba Foundation Symposium (Boston, Little, Brown and Company, 1964. $11.00).

AN ESSAY ON COLOR VISION, by *Arthur Linksz,* M.D. (New York, Grune & Stratton, Inc., 1964. $15.75).

COMMUNICABLE AND INFECTIOUS DISEASES, FIFTH EDITION, by *Franklin H. Top,* M.D. (St. Louis, The C. V. Mosby Company, 1964. $21.00).

MODERN TREATMENT: TREATMENT OF RENAL DISEASE, Volume 1, Number 1, edited by *E. Lovell Becker,* M.D. and *Edward A. Carr, Jr.,* M.D. (New York, Harper & Row, 1964. $16.00 for series of six).

FUNDAMENTALS OF OTOLARYNGOLOGY, FOURTH EDITION, by *Lawrence R. Boies,* M.D., *Jerome A. Hilger,* M.D. and *Robert E. Priest,* M.D. (Philadelphia, W. B. Saunders Company, 1964. $8.50).

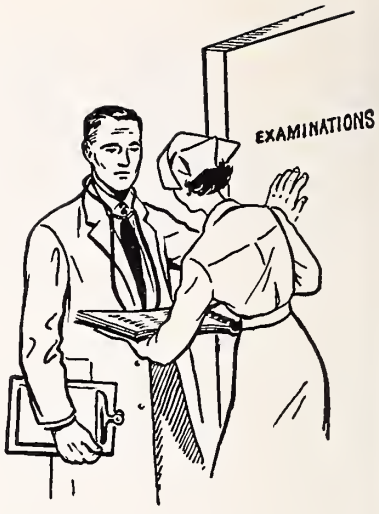
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THE DOCTOR'S BUSINESS



Partnership Life Insurance

HOWARD D. BAKER
Waterloo

Frequently a question arises in medical partnerships as to whether the purchase of a partner's interest upon his death should be funded by the purchase of insurance on the lives of the partners. Briefly, this is accomplished by a system of cross-insurance whereby a policy is carried on each partner's life. Each policy on a partner's life is owned by all the other partners, and they are also the beneficiaries of that policy. For example, in an "A, B, C" partnership, "A" and "B" own a policy on "C"; "A" and "C" own a policy on "B"; and "B" and "C" own a policy on "A." Because of the varying ages of the partners and the consequent differences in rates, the insurance premiums are usually totaled and charged to the partners on an equal basis. These premiums represent personal, nondeductible expense to the partners.

Since the policy on a partner's life is owned by the other partners, this insurance is not included in his estate in case of his death. The proceeds of a policy, in case of death, are tax-free to the beneficiary partners.

What are some of the advantages of such a plan?

1. It provides immediately available cash upon the death of a partner for liquidation of his capital interest.

2. It eliminates any risk that a partner's estate may not get its money from the remaining partners.

3. It eliminates any financial burden on the surviving partners when one or two members die, and it insures the continuation of the partnership. Without such insurance, it often is necessary to liquidate the partnership in order to pay off a deceased member's interest.

The major disadvantages are:

1. Each partner indirectly finances the liquidation of his own capital account by paying his *pro-rata* share of the cost of the insurance. This expenditure benefits his partners, but not his own family.

2. Advanced age and marginal insurability often make the cost of such an insurance program extremely high.

3. For partners who are financially independent, this may represent an unnecessary expenditure.

What, then, is the best means of determining whether or not the partners should purchase life insurance on one another?

1. A determination should be made of just what the capital investment in a partnership is, and whether or not this investment is large enough to necessitate an insurance program. In many manufacturing and retail firms, the capital investment is extremely high and represents all the assets of the partners. This is not generally true of professional partnerships.

2. A review should be made of age, insurability and financial status of each partner involved. This will reveal both the cost of an insurance plan and, combined with paragraph "1," will determine the need for an insurance plan.

3. A study should be made of workable alternatives to an insurance plan. These include such things as available credit for financing (buildings, equipment, etc.), payment of a partner's interest in accounts receivable as collected, and installment payments to an estate in settlement of the remaining capital interest.

As an example of a partnership-insurance problem and its solution, let us consider the "A, B and C" partnership. These doctors own an office building and equipment valued at $54,000, and have accounts receivable totaling $39,000. The cost of liquidating would be $31,000 in the event of a partner's death. Doctor "A" is 57 years of age and independently wealthy. He has a physical condition that would increase his life-insurance cost by 20 per cent. Doctor "B" is 41 and could easily borrow funds to purchase his share of a partner's interest. Doctor "C" is 29 and has no resources

(Continued on page 367)

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Iowa Chapter of the
American Academy of General Practice

The Medical School and General Practice

ROBERT C. HARDIN, M.D., Dean
S.U.I. College of Medicine

There has been much change in medical schools in the past 15 or 20 years, and this same period has been marked by a similar degree of alteration in medical practice. In some part, at least, the changes in practice and in education are related and are responses to the same forces. This is sufficient reason for the medical school to be interested in the problems of practice, but there are even more compelling ones.

Considerable emphasis has been placed, in the last decade, upon the research programs of medical schools and on the attendant training of research workers and medical teachers. These efforts must be well managed and properly supported, but teaching remains the primary purpose of a medical school, and the practicing physician is its chief product. Because the majority of medical graduates enter practice, medical schools have a legitimate interest in the problems of practice.

In the past several years, much has been said about the "shortage of physicians." An examination of the facts reveals that there has been no diminution of the ratio of physicians to population since 1930, but that there has been an increase in specialization, with a corresponding decrease in the number of generalists, and this trend seems to be accelerating. Many reasons have been advanced to account for this shift, but there is no agreement as to the relative importance of the various possible causative factors. I should like to discuss some of them which seem to be particularly related to medical education.

THE CREATION OF SPECIALISTS IN GENERAL PRACTICE

First, it should be noted that if we should succeed in producing more general practitioners, we would be going against the tide. Our age is marked by ever-increasing specialization in all fields. In science, knowledge has increased at a rate so rapid that specialties have grown up in the formerly unified fields of chemistry, physics and mathematics to a degree exceeding that in medicine. There is even sub-specialization. For instance, one biochemist may not understand the work of another. Medicine has simply shared in this kind of natural response to the force of exploding knowledge.

Repeated division of a given field of endeavor through specialization by its practitioners has certain easily identified advantages and, in pure science, few disadvantages. Medicine, however, is mainly concerned with the care of the sick and with broad community programs related to health. In these aspects, it is an applied science, and specialization has many disadvantages. The problem for medical education is how to make all of the new knowledge available for the care of our people. The idea of specialization seems inimical to this process, but paradoxically, the solution to the problem may lie in the same concept.

In all fields of education, and especially in medicine, there is no longer room in the curriculum for new material. The problem today is not so much what should be added to the curriculum, as what can be taken out. In the past, additions have been made to such an extent that almost every medical school in the United States now has sessions in the last two years exceeding the 32 weeks of the traditional academic year. If more material is to be added to the undergraduate curriculum, the medical school course will have to be lengthened by a calendar year. Furthermore, the premedical years have been increased to a minimum of three from an older standard of two. Students are strongly advised to complete the requirements for a bachelor's degree before entering medicine. In the period immediately after medical school, the time spent in specialization has been substantially increased. Now the American Academy of General Practice, with good reason, suggests that the period of post-doctoral training for the family physician should be doubled. If we are to continue to attract young men and women into careers in medicine, we must find a solution for our problems different from that of constantly adding more years to the course of study.

Since obviously it is no longer possible for any one person to possess all of the knowledge concerning medicine, it follows that all practitioners of the art must specialize in some measure. It is

Presented in Kansas City during September, 1963, at the AAGP State Officers Conference.

logical to assume that we shall have a seeming contradiction—a specialist in general medicine or, as he is perhaps better called, a family doctor. It is in this man that modern medical knowledge can most readily be made available to the family.

ALTERNATIVE MODES OF TRAINING

The medical educators' problem is to determine how to prepare the family doctor for his life work. Two pathways seem to be open. The first of these has been tried in some countries. It is the pathway of early specialization. The prospective general practitioner is given a shortened medical course which is designed to make him a kind of glorified first-aid man who can take care of minor emergencies and who presumably will know when to obtain help from his more thoroughly trained colleagues. I do not believe that this is an adequate solution of the problem, because it does not make the best of medical knowledge immediately available to the members of a family in time of emergency. It is an outgrowth of an older mode of medical education which was quite adequate at one time, but which failed in consequence of the growth of knowledge and should now be abandoned. This was the system in which all available medical knowledge was taught to the student during his undergraduate medical days, and which made every graduate into a general practitioner. Specialization, in those days, was a simple training by apprenticeship, and was concerned mainly with technical detail, mastery of manual skills, but no body of special knowledge. The graduate of the modern American medical school is prepared neither for general practice nor for the practice of any other specialty.

A REDESIGNING OF THE CURRICULUM

I believe the second pathway of medical education can produce the needed family physicians. It is widely recognized that there is a core of knowledge which should be possessed by all practitioners. It is this core that must be taught during medical school days. Medical educators must spend whatever time is necessary to sort out and identify those things which should be included in this curriculum. They must recognize two fundamental facts. The first of these is that this core of knowledge should contain material basic to all specialties including family practice, but that specialized knowledge should be left for post-doctoral training. The second is that no attempt should be made to have students specialize during their undergraduate days, since such attempts would invalidate the entire program.

It will not be an easy task to construct a curriculum of this type. It may be that some of the material traditionally included in undergraduate medical education must be deleted and replaced by material from associated fields which is now untaught in medical schools. As an example of this kind of possible curriculum content, I suggest that we perhaps need to consider the study of the family as a medical subject, since the family is the basic social unit of the human animal, for whose care we believe we are preparing our students. As our knowledge increases, teaching in medical schools will have to concern itself more intensively with the basic mechanisms of disease and less with the intricacies of case management. The goal of undergraduate medical teaching has become (and probably will remain) that of giving the medical student a foundation of fundamental medical knowledge, of teaching him how to learn by studying his patients, and inculcating in him habits of self-education which will abide with him throughout his life. In addition, he should be given a good appreciation of the role of the physician in the community, as well as of his responsibility for the individual patient.

In this scheme, specialization, including preparation for family practice, would come in the post-doctoral years of training. It should be noted that the modern medical curriculum places the student in close contact with patients during the entire last two years of his collegiate program. It is here that he finds out how to study patients and how to learn from them. During this period, he does essentially what was done in years past and in the rotating internship. This poses another question for medical education. The rotating internship now is largely a repetition of the last two years of medical school, except that in some hospitals the intern has a greater degree of responsibility for the patient. It may be that this acceptance of a greater degree of responsibility could be undertaken in another kind of program which would be more useful in the process of educating the physician.

I think that the student should go from medical school directly into training for the kind of practice which he plans to undertake. If this is to be family practice, the young physician should have a program which is designed to prepare him adequately, and which builds upon a medical school base in a specific and specialized fashion. Several such programs are now under trial. The experience gained from them should give us a capability for designing better programs for the training of family physicians without adding more years to the period of study.

To build these kinds of programs, I believe we shall have to discard some of our older concepts. I think we have all surmounted the hurdle of thinking of the general practitioner as a "non-specialist." We are beginning to recognize that there is a body of knowledge which is peculiar to general practice, just as there are other bodies of knowledge peculiar to other specialties. We recognize the need for post-doctoral education of a specifically designed sort for the preparation of the family physician.

There are some other ideas which we should examine. One of these is that post-doctoral training is done best in large teaching hospitals associated with medical schools. I am quite certain that this generalization is no more true than are most other generalizations. Hospitals of all types differ from one another; this is true of university hospitals as well as community hospitals. Not every hospital can successfully undertake all kinds of training programs. The placement of general practice programs must be done very carefully. The community hospital outside of a large medical center may be well suited for this purpose. There are certain practical advantages to such an arrangement. First of all, these hospitals are more likely to serve people with the types of problems which the budding family physician will deal with when he establishes his practice. In addition, he can profit from the advice of older physicians engaged in that kind of practice. Third, we all know that young medical men tend to locate in areas where they take their post-doctoral training. Since we are concerned with the production of family physicians for community practice, the placing of these training programs in community hospitals is particularly attractive.

I happen to believe that one of the reasons why young men do not enter family practice is that there are insufficient opportunities for adequate training in that type of medicine. I think all of us must realize that increasing specialization, as we know it today, will effectively prevent the application of our newly gained knowledge to the solution of the everyday problems of health which face families. We need to abandon the idea that every medical student who graduates is prepared for general practice, and to redesign our programs to provide a specific body of knowledge to those men who desire to enter family practice. This program need not be an inferior type of preparation, but must be a true specialization. This is what I meant when I said that perhaps we could find the answer to our problem within the framework of increasing specialization, although at first glance that might seem to be a paradox.

Partnership Life Insurance

(Continued from page 364)

whatsoever. His maximum credit would be about $5,000.

Here is the solution they might choose. Accounts receivable could be made self-liquidating; in case of death, they could be frozen and each partner could be paid his interest as they were collected. In their partnership agreement, a clause might give the surviving partners the option of paying off the deceased partner's interest either in a lump sum or over a period of five years, with minimum payments of $300 per month, including interest at 5 per cent on the declining balance. As added protection, each doctor would have his own credit and resources, and the surviving doctors would also have a mortgagable building which could provide $25,000-$30,000 of purchase money at 5½ per cent.

In this hypothetical case, we feel that the solution just outlined is much more workable than an extremely high-cost insurance plan would be. In summary, we feel *generally* that large life-insurance programs are not necessary for professional partnerships, and that the insurance premiums can better be used by doctors with meager resources in providing much-needed insurance protection for their own families.

Since this is *no more than generally true,* there are individual exceptions; therefore, an extensive individual study should be made by the partners, their attorneys and their financial advisors before adopting a program of life insurance. Such a study would determine whether a need exists for partnership life insurance and, if so, how large a program is necessary.

Coming Meetings

CONTINENTAL U. S.

July 5-10	**Annual Conference of the American Physical Therapy Association,** Denver-Hilton Hotel, Denver.
July 6-9	**Ophthalmology,** Estes Park.
July 10-11	**Rocky Mountain Cancer Conference,** Brown Palace Hotel, Denver.
July 20-25	**Tenth Annual General Practice Review,** University of Colorado School of Medicine, Denver.
July 27-29	**Three Days of Cardiology,** University of Colorado School of Medicine, Denver.
July 29-31	**Respiratory Allergy and Immunity,** Lake Tower Motel, Chicago.
Aug. 2-6	**National Medical Association,** Statler Hotel, Washington, D. C.
Aug. 3-7	**Pediatrics,** The Stanley Hotel, Estes Park.
Aug. 24-27	**American Academy of Physical Medicine and Rehabilitation,** Statler-Hilton Hotel, Boston.
Aug. 24-27	**American Hospital Association,** Palmer House, Chicago.
Aug. 24-28	**International Conference on Preventive Cardiology,** University of Vermont, Burlington.

ABROAD

Aug. 16-22	**International Congress for Social Psychiatry,** London. Info: 7 Hollycroft Ave., London NW3.
Aug. 29-Sept. 5	**International Society of Urology,** London. Sec.-Gen.: D. Innes Williams, 61 Harley House, Marylebone Road, London NW1.
Aug. 30-Sept. 5	**International Congress of Hematology (tenth),** Stockholm. Sec.-Gen.: Lars E. Bottiger, M.D., Box 638, Stockholm.

Iowa Association of Medical Assistants

IAMA Convention News

Climaxing the 8th Annual Meeting of our Association, held in Cedar Rapids May 15-17, was the candlelight ceremony conducted by Miss Waneta Christensen of Waterloo in which newly elected officers were installed.

Mrs. Gladys Knight, president, from Waterloo, is a graduate of Omaha High School. She has been employed by Dr. C. V. Seibert for about five years as secretary-assistant. Previously she had been employed in the same capacity by an eye, nose and throat specialist, as assistant bookkeeper in Doctor's Hospital and a collection agency in Omaha, and as secretary to Drs. Entz and Kruse. She has served as president, vice-president and treasurer of the Black Hawk Association of Medical Assistants, and as chairman of its Budget and Finance Committee. She has also served as corresponding secretary for IAMA in 1961-62 and as treasurer of the 1962 IAMA Convention which was held in Waterloo.

Mrs. Lucille Holmes, of Des Moines, was installed for a second term as vice-president. She attended Drake University for two years. Her employment has included working for Dr. George Watters, for Dr. Tom D. Throckmorton, and 15 years for her present employers, Drs. Latchem and Burke. In the Des Moines Chapter of IAMA, she has held the office of secretary and served as chairman of the Program and Bulletin Committees. She has also served IAMA as chairman of its Pin Committee for several years.



Mrs. Gladys Knight

Mrs. Dolores Mallinger, president-elect, is a graduate of Ft. Dodge High School and Tobin Business College. She was employed for four years by the late Dr. A. S. McMillen; for five and one-half years by the late Dr. L. L. Leighton, and for the past five and one-half years by Dr. E. M. Swanson. She is a charter member of the Ft. Dodge Medical Assistants, and has served as its secretary, president-elect and president. She has also been editor of the IAMA ANNUAL BULLETIN, and has served as IAMA recording secretary.

Mrs. Jeanne D. Green, recording secretary, of Davenport, is a graduate of St. Joseph's High School, Dewitt. She was employed for three years as secretary to Dr. Dean C. Snyder, in DeWitt, and has been secretary-assistant to Dr. James F. Bishop, of Davenport, for 15 years. She was charter president of the Scott County chapter of IAMA. She has served IAMA as corresponding secretary and also as a member of its Education, Membership and Bulletin Committees.

Mrs. Nita Moon, treasurer, is also from Waterloo. She was graduated from St. John's School, in Independence, and Gates Business College, in Waterloo. For the past four years she has been employed as secretary-receptionist by Dr. Craig D. Ellyson. She served the Black Hawk County Medical Assistants as treasurer for two terms, and as chairman of its Membership Committee. She was a member of the IAMA Membership Committee this past year.

ADVOCACY OF FREE ENTERPRISE SYSTEM

An action taken by the House of Delegates at the IAMA Annual Meeting will be of particular interest to members of the Iowa Medical Society. The following resolution was unanimously adopted by the IAMA Executive Council and House of Delegates:

"WHEREAS, The Iowa Association of Medical Assistants, a non-profit educational organization, formed for the purpose of self improvement and education by and for the members thereof, in that they may better serve their physician-employers; and

WHEREAS, The Iowa Association of Medical Assistants is cognizant and appreciative of the cooperation and encouragement of the Iowa Medical Society and the American Medical Association; and

WHEREAS, it is recognized that outside forces, directly or indirectly, seek to nationalize the practice of medicine;

Therefore Be It Resolved, That members of the Iowa Association of Medical Assistants be alert to the current state and national trends of proposed legislation, endeavoring to have each member fully informed thereon; and

Be It Further Resolved, That the Iowa Association of Medical Assistants pledges organizational support and assistance to the Iowa Medical Society and to the American Medical Association in all legislative matters relating to the practice of medicine as a free enterprise, and, hereby offers to the Iowa Medical Society and to the American Medical Association full cooperation and aid whenever needed and requested by either of said Medical Associations."

Similar resolutions will be submitted for adoption by the governing bodies in the 40 states now organized and chartered by the American Association of Medical Assistants, and to the House of Delegates of AAMA, which will meet in Oklahoma City this October.

—HELEN G. HUGHES

AMA Criticizes Youth-Fitness Report

In the June issue of JAMA, the AMA Division of Environmental Medicine found serious fault with the Youth Fitness Report, on the basis of which President Johnson has ordered draft examinations for the nation's 18-year-olds.

The AMA said that the report, though purporting to indicate deficiencies in the entire American population, actually deals only with the percentages of young men who have been found unqualified for military service for physical or mental reasons. The report was drawn up by a task force on manpower conservation consisting of the Secretaries of Defense, Labor, and Health, Education and Welfare, and the director of the Selective Service System.

The task force asserted that its inquiry showed one-third of all young men in the country reaching 18 years of age would be found unfit for induction, about half for medical reasons, and the remainder for failure to meet mental standards. Besides the draft examinations, Mr. Johnson directed the establishment of job-training, education and health programs to remedy the alleged deficiencies.

The AMA pointed out:

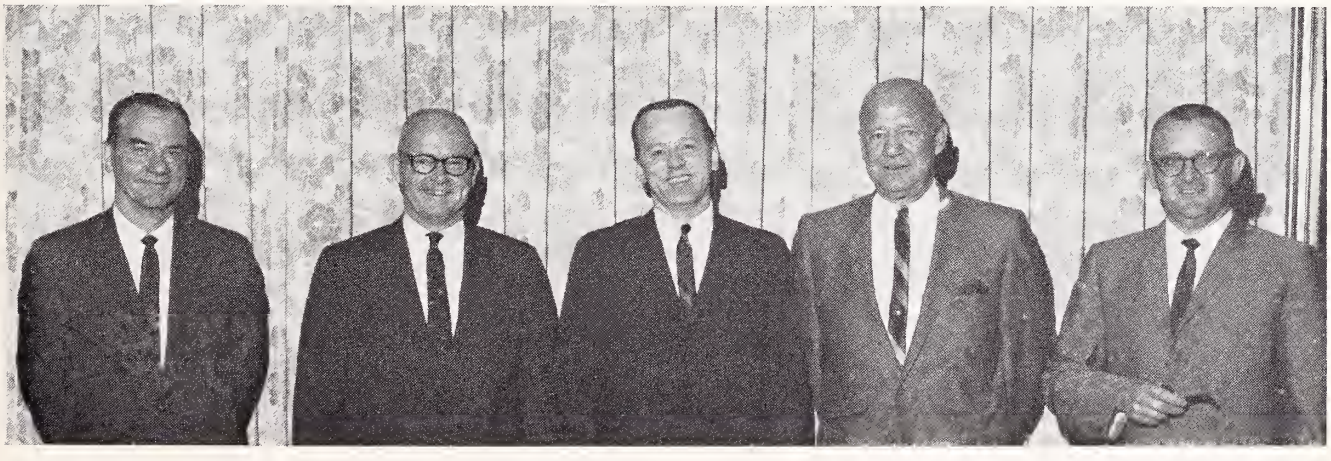
• The survey consisted of interviews at some 200 places in 37 states. **Thirteen states were excluded because of low rates of rejection and small numbers of rejectees.**

• **Interviews were limited to those who consented to visit Selective Service offices for that purpose.** Apparently no attempt was made to have workers excused from employment to attend the interviews, and thus those who came probably were those who held no regular jobs.

• **Apparently little effort was made to validate the information supplied by the interviewees.**

• **No explanation is given for the conclusion that "75 per cent of draftees rejected for medical reasons would probably benefit from medical treatment."** Further, the article charged that the report fails to account for 20 per cent of the rejectees when it sets forth the proportion who have correctable conditions, those who would benefit from health services, those for whom health services are not the answer, and so on.

The AMA concluded: A program of this size, with its many implications, deserves the serious consideration of our lawmakers, of nongovernmental experts in medicine, education, vocational guidance, rehabilitation. It should not be allowed to come into being on the basis of a hasty, poorly substantiated political brief."



The speakers at the IAMA convention evidently found their task a pleasant one. From left to right, smiling broadly, are Mr. Ken Barrows, of Bankers Life; C. E. Radcliffe, M.D., of the SUI College of Medicine; Mr. Eldon Huston, of the IMS staff; E. M. Smith, M.D., medical consultant to the State Board of Social Welfare; and Mr. Glenn Kimball, of Blue Cross.

STATE DEPARTMENT OF HEALTH



ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

Morbidity Report for Month of May, 1964

Diseases	1964 May	1964 April	1963 May	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	468	613	292	Dubuque, Jefferson, Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	2,084	1,756	901	Cass, Crawford, Dubuque, Page, Polk, Potawattamie
Whooping cough	77	5	6	Shelby
Brucellosis	6	15	10	Dubuque
Chickenpox	490	596	374	Des Moines, Dubuque, Polk, Scott
Meningococcic meningitis	0	1	1	
Mumps	1,269	2,070	222	Dubuque, Jones, Polk, Pottawattamie, Union
Poliomyelitis	0	0	0	
Infectious hepatitis	29	23	37	Black Hawk, Dallas, Polk, Scott
Rabies in animals	53	55	37	Entire state
Malaria	0	0	1	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	39	4	27	For the state
Syphilis	78	81	64	For the state
Gonorrhea	130	88	89	For the state
Histoplasmosis	1	2	6	Marshall
Food intoxication	0	0	25	
Meningitis (type unspecified)	2	3	2	Floyd, Shelby
Diptheria carrier	0	0	0	
Aspetic meningitis	0	0	1	
Salmonellosis	6	4	3	Black Hawk, Linn, Polk
Tetanus	1	1	1	Floyd
Chancroid	0	0	1	
Encephalitis (type unspecified)	2	1	0	Dubuque, Monroe
H. influenzal meningitis	0	0	0	
Amebiasis	2	5	1	Adams, Boone
Shigellosis	9	1	1	Polk
Influenza	198	382	3	Polk

Vaccines and Biologics Currently Available

(This information supplements the release of December 29, 1962, entitled, "Drugs and Biologicals Available," Iowa State Department of Health, published on page 107-108 in the February 1963 JOURNAL.)

Funds now available to the State Department of Health through the new Vaccination Assistance Program make it possible for us to make certain modifications in our program of distribution of vaccines. Thus we can now include distribution of poliomyelitis vaccine, both Sabin and Salk polyvalent, for persons up to the age of 18 years. Pregnant women are also eligible to receive this material. We request that persons ordering biologics from the State Department of Health observe the instructions listed below.

To order smallpox vaccine, triple toxoid, diphtheria-tetanus toxoid and Salk or Sabin polyvalent poliomyelitis vaccine, call or write to Paul H. Ogilvie, administrative assistant, Division of Preventable Diseases, or Mrs. Clara Whetstone, administrative assistant, Vaccination Assistance Program, Des Moines telephone numbers, 281-5427 or 281-5428.

OTHER BIOLOGICS

Rabies vaccine, gamma globulin, typhoid vaccine and histoplasmin will continue to be supplied by the Division of Preventable Diseases. Address all correspondence regarding these to Ralph H. Heeren, M.D., director, Division of Preventable Diseases, or to Mrs. Melba Fulton, secretary, telephone number, 281-5424; or to Stanley L. Hendricks, D.V.M., public health veterinarian and assistant director, Division of Preventable Diseases or Miss Amber Smith, secretary, telephone number 281-5643.

For old tuberculin for skin testing, call or write Ralph H. Heeren, M.D., or Miss Marie Ford, secretary, Tuberculosis Control Division, telephone number 281-5642, for information regarding distribution.

SHIPMENT OF VACCINE

Except for (a) emergency shipments of rabies vaccine, and (b) gamma globulin, which is not affected by temperatures outside the refrigerator, biologics will not be shipped from the State De-

partment of Health offices after Thursday noon of each week. This regulation is followed because shipments dispatched later than that time probably would not reach their destinations by closing time on Friday, and would lie in the post office over the week-end without proper refrigeration.

Because oral vaccine must be shipped in dry ice, and shipping charges are consequently excessive, no order will be accepted for fewer than 100 doses of oral poliomyelitis vaccine.

We normally cannot guarantee shipment of large orders of biologics such as might be used in a school or area program without a minimum of a week's notice. We prefer at least two weeks' notice for large orders.

Although it definitely advocates the use of measles vaccine, the Department cannot furnish it at this time because of the present costs of the vaccine.

"Tranquilizer" Is a Misnomer

"Tranquilizing" drugs are misnamed and show broader effects than previously suspected, according to a recent report by scientists at the National Institutes of Health. New evidence indicates that the phenothiazines—the most widely-used of the "tranquilizers"—improve the passive, withdrawn, apathetic patient even more than the agitated, abusive one. The drugs' action, therefore, is broader and more versatile than is presently outlined in standard medical texts.

This finding was reported by Dr. Jonathan C. Cole, director of the Psychopharmacology Service Center of the National Institute of Mental Health, at a VA psychiatric conference in Kansas City, Missouri. His conclusion was based on a nine-hospital collaborative study of 340 patients. It showed that the following symptoms which are considered fundamental to schizophrenia are the most improved by the phenothiazines: poor social participation, poor self-care, confusion, indifference to environment, and hebephrenic gestures (grimacing and giggling).

Psychiatric teams which evaluated patients with these symptoms after six weeks of drug therapy found them markedly improved. "In contrast," Dr. Cole added, "hostility, agitation, anxiety and ideas of persecution—symptoms which are usually regarded as 'target symptoms' for tranquilizing therapy—although influenced by the drug treatment, were not affected to as great a degree."

"During the past dozen years," he said, "the phenothiazines have been stereotyped as 'ataractics' or 'tranquilizers,' the implication being that their dominant action is to calm excited patients by relieving the patient's anxiety. . . . We have presented evidence to confirm that phenothiazines . . . have a wide variety of clinical effects beyond tranquilization."

The drugs were shown to act in two ways, according to the study's coordinator, Dr. Solomon Goldberg. They alleviated the patient's pretreatment symptoms, and prevented the development of other schizophrenic symptoms the patient did not have before treatment. The authors conclude that the drugs seem to have a general alleviating and preventive antischizophrenic action, and can be used appropriately for a wide variety of schizophrenic patients.

Vaccination Against Cholera

Dr. Luther L. Terry, surgeon general of the Public Health Service, repeats a warning issued last August. It states that vaccination for cholera is recommended "for all travelers to Asia and the Western Pacific except babies less than six months old." The vaccination consists of two inoculations seven to ten days apart. For adequate protection, the second inoculation should be obtained not less than six days before departure.

"At present the following countries are infected with cholera: Burma, Cambodia, Hong Kong, India, Indonesia, Malaya, Sarawak, Singapore, Pakistan, South Vietnam, The Philippines and Thailand.

"Travelers entering the United States from cholera-infected areas are being required to present a valid international certificate of vaccination against cholera in the past six months."

Information regarding requirements for overseas travel can be obtained from the Iowa State Department of Health or from the Division of Foreign Quarantine, Public Health Service, Washington 25, D. C.

IOWA TYPHOID CARRIER STATUS
December 31, 1963

During 1963, six names were removed from Iowa's typhoid carrier listing. One was added. These additions and subtractions leave a total of 38 persons listed as proved, chronic typhoid carriers. Names of six other persons are carried on a "questionable" list. Most of this latter group have had cholecystectomy or therapy to terminate the carrier condition, but are still in the period of post-operative or post-therapy cultures. When these cultures have been completed, some of the six names may be removed from the registry.

Of the total of 44 persons listed as definite or suspected carriers, 54.5 per cent are females and 45.5 per cent are males. Their age range is from 43 to 99 years, with a median age of 67½ years. Four persons are in the 40's; seven in the 50's; 15 in the 60's; 12 in the 70's; four in the 80's; and two in the 90's.

Thirty-three of the total of 44 persons remembered the age at which they had had typhoid fever. From the figures listed above, their median age at

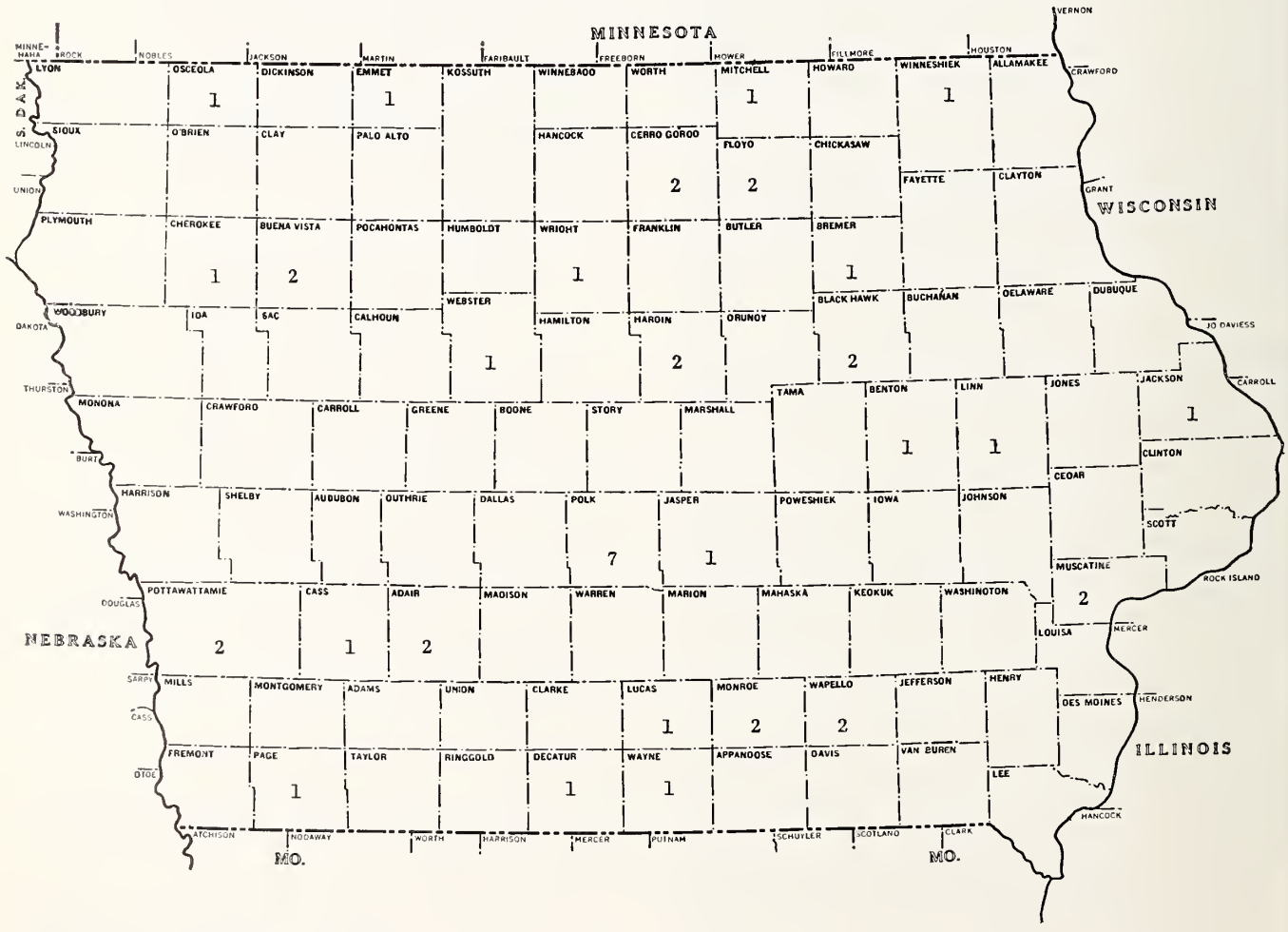
that time was 25 years. Since their median age at the present is 67 years, we can assume that our average typhoid carrier in Iowa has harbored the organism for 42 years. This indicates that the typhoid carrier group, unless treated either surgically or medically, is likely to harbor the organism for a long period.

Though all these people have been instructed as to the simple, basic precautions they must observe if they are not to serve as sources of infection for others, all must be re-visited at least once a year. Some live in counties without public health nurses. Their supervision is directly from this Division. Our nurses find it difficult to convince these elderly people that there are certain things they shouldn't do when they baby-sit for their grandchildren, most of whom have not been immunized against typhoid fever. The answer of an 85-year-old grandmother recently was: "Young lady, I have raised six children and helped with 20 grandchildren. I guess I don't need you to tell me how to care for my great-grandchildren." The grandchildren are just as reluctant to have their child vaccinated as they are to repeat the nurse's instructions to their grandmother.

AGES OF 33 OF IOWA'S CARRIERS WHEN THEY HAD TYPHOID FEVER

No. of Patients	Age	No. of Patients	Age
1	6	1	28
1	10	1	31
3	12	1	34
1	13	1	36
1	17	1	38
1	19	1	41
3	21	1	43
4	22	1	44
1	23	2	47
3	25	1	54
2	27	1	57

Distribution of Typhoid Carriers by Counties





Physicians Should Be Civic Leaders

As the Fourth of July approaches, and as physicians' thoughts turn, however fleetingly, to the Declaration of Independence, they can take some satisfaction from the reminder that no fewer than five of its 55 signers were doctors of medicine, and that since 1776 there have been 325 or more doctors in the U. S. House of Representatives, and 37 in the Senate. Indeed except only for lawyers, physicians have been about as numerous there as the members of any other occupational group. They should continue to share in lawmaking at the federal level and at the local ones too.

It is gratifying that doctors and doctors' wives were numerous and prominent in one of the Iowa political conventions this spring, and that at least two physicians were candidates in the recent primary election. All physicians, regardless of their affiliation, applaud them.

Doctors are needed in government, and they are needed among the policymakers in non-governmental organizations that undertake to serve the public or any considerable segment of it. In the first place, health is a primary consideration in the planning of virtually every kind of activity, in the founding of every type of institution, in the construction and use of every building, and in the management of nearly every event. Second, physicians have had long and intensive training in preventive as well as in curative medicine and thus are experts, or men and women of special knowledge—the special knowledge that is most constantly in demand.

In addition, they are professional people. The professions as everyone knows, include medicine and the paramedical arts, the law, the church and education, but the quality that makes a doctor, a lawyer, a clergyman or a teacher a professional is his willingness to subordinate his personal interests, and to do or advise only what is best for his patient, client, parishioner or student. Surely special knowledge relating to health, in the persons of men or women who characteristically guard their fellow citizens' welfare, must be a prime asset for any governmental agency or service club.

CIVIC SERVICE IS A PROFESSIONAL OBLIGATION

We take this patriotic occasion to remind our fellow physicians—and particularly our younger colleagues—to volunteer for these responsibilities. If they are tempted to reply, as well they may, that they are kept busy by their patients, or that they already have too little time to spend with their wives and children, we sympathize with them, but we reiterate that civic service is one of their obligations. Where else are these organizations to find reliable counsel in the health aspects of each of their undertakings?

A perusal of the "Personals" notes in this or any other issue of the JOURNAL OF THE IOWA MEDICAL SOCIETY will yield several examples of the civic accomplishments of Iowa physicians. There are doctors with long records of service on school boards or town councils; others have participated in Rotary or Lions Club projects; there are doctors who have served draft boards for many years; still others are chief or deputy medical examiners.

The organizations in which physician participa-

tion is essential are myriad. Churches, now that they concern themselves increasingly with activities and problems no more than tangentially religious, should constantly have the benefit of the doctor's point of view. The military veterans' organizations need doctors' assistance because they undertake youth work, and provide recreational and other types of services to hospitalized men and women. Though the national health organizations have adequate physician participation at present, the doctors who have been active in those groups for many years need younger men to help them or, occasionally, to replace them.

The schools—especially the smaller systems, both parochial and public, that are too precariously financed to hire school nurses—need more attention from physicians than most of them get. At the IMS Annual Meeting, in April of this year, the Pottawattamie County Medical Society proposed the sponsoring of a bill in the forthcoming General Assembly to make periodic immunizations of all pupils compulsory. Short of compulsion, it seems more practical, as well as philosophically preferable to use persuasion. Where parents tend to be apathetic, and neglect or refuse to give their consent, all that probably is needed is for doctors and doctors' wives to join and take active roles in local PTA's.

Teen-agers' clubs can provide physicians with repeated opportunities both to promote preventive medicine and to recruit personnel for the medical and paramedical professions. Throughout Iowa, the field staff of the Agricultural Extension Service and the "county agents" who sponsor 4-H Clubs, and the directors or leaders of youth groups such as the Boy and Girl Scouts, Future Farmers of America, YMCA and YWCA would be delighted to have doctors of medicine help them with important segments of their work. The protection and improvement of health has long been one of the principal objectives of each such group, but since the laymen who are in charge want to be sure to avoid doing the wrong thing, the promotion of health too often is given little more than lip-service.

INTERPROFESSIONAL COOPERATION

Finally, we want to mention a couple of other organizations. One of them has become well established at the state level, and the other is to be started within the next few months. Physicians will be called upon to participate actively in both. The Iowa Interprofessional Association, for the past few years, has combined the Iowa Medical Society, Iowa Dental Association, Iowa Veterinary Medical Association, Iowa Pharmaceutical Association, Iowa Nurses Association and Iowa Hospital Association, at the state level, to provide for an exchange of ideas, to implement Civil Defense plans for care of mass casualties in cases of disaster, to recruit health service workers, and just six weeks ago, to present a conference in Des Moines on quackery. When a campaign starts to form IIA chapters in cities or counties, the success of the effort will depend in large measure upon the enthusiasm manifested by local physicians.

The new group that the IMS House of Delegates has directed its officers to initiate is The Iowa Association of Professions, which is to include attorneys, architects and perhaps other professions, in addition to some of the groups belonging to IIA. Because professional people have similar concerns and nearly identical habits of mind, it seems essential that they have a formalized means of working together. Especially since the medics are undertaking to organize the IAA, its success will depend heavily upon the amount of effort they are willing to expend on it.

CONCLUSION

If the maintenance of close ties with their fellow citizens is advantageous to individual physicians and to organized medicine as well, then doctors have something individually and collectively to gain from their civic activities both within and outside of government. Principally, however, the rewards they can glean from good citizenship are the same as those that accrue to all other good Americans—an occasional sense of accomplishment, interspersed, of course, with many frustrations; and pleasant and stimulating associations with other alert and interesting people.

Woman's Auxiliary News

Mrs. Dean H. King Memorial Loan Fund

A Memorial Loan Fund has been established as a part of the Health Education Loan Fund, in memory of the late Jane King (Mrs. Dean H.). This particular fund will be used to provide full or partial tuition, on a loan basis, for nursing education. Gifts to it are invited, and should be sent to the HELF chairman, Mrs. E. A. Larsen, 323 East Oak Street, Centerville.



Mrs. King

It was a privilege for many of us to know Mrs. King over a period of years. She was born and brought up in Iowa City. She graduated from the State University of Iowa College of Nursing with a degree of bachelor of science as well as a graduate nurse's degree. She also attended the Presbyterian School of Nursing, in Chicago, and was a member of Sigma Theta Tau, a national honorary nursing sorority.

She was married to the late Dr. Dean King on October 18, 1931. From Iowa City they went to Providence, Rhode Island, where Dr. King served his internship and Mrs. King was a supervisor at the Emma Pendleton Bradley Memorial Hospital for Children.

Dr. and Mrs. King located in Spencer, Dr. King's home town, in October, 1932, and she worked there as the doctor's office nurse.

During World War II, accompanying Dr. King, a captain in the Air Force, she was an instructor of cadet nurses at Seton School of Nursing, in Colorado Springs. Her sudden death, in Spencer on Tuesday, March 31, 1964, came as a shock to all who knew her.

Jane King had worked untiringly for community health improvement. She was president of the Woman's Auxiliary to the Iowa Medical Society in 1956, after having served in many other Auxiliary offices and after having been chairman of various committees. She was particularly interested in health careers activities, and was instrumental in the organization of Future Nurse Clubs in Iowa.

At the time of her death, Jane King was still actively sponsoring the Spencer Future Nurses Club. She had been a member of the Clay County Welfare Board several years, and was president of the board of directors of Longhouse Residence, a long-time dream of hers and Dr. King's.

The President Says

Many years ago, Dr. Rock Sleyster wrote an article entitled "The Doctor's Wife." Its message is timeless, for the joy and success of the doctor's wife is, as ever it shall be, in knowing that she has been a good partner. He said:

"To understand your husband and his job, you must go back to a time, possibly before you knew him, a time when he made the great decision to give his life to the care of the sick. No ambition for power, or fame, or glory, or riches prompted him in his choice of a career. Rather, it was his interest in science and his love of service. It was the highest idealism of youth motivating him when he determined on the hardest, the longest, and the most expensive preparatory education to take up a life's work whose main reward is the satisfaction of service well done. It is this idealism, this willingness to sacrifice, this sense of values, which you as his partner must share with him, and must keep alive in him.

"As the husband of a doctor's wife, I am appreciative of the fact that no single influence helps to develop and mold the doctor as does his nearest partner in the business of life. Nothing—and I say this without the slightest reservation—nothing—is as important in shaping the doctor's career, as is his wife and his home. Being a doctor's wife is both an art and a career."

In the whirl of today's complexities, the value of Auxiliary membership is appreciated anew by the doctor's wife. Being a good partner does not just happen. It is the result of the effort each of us makes to understand and to complement, through our activities, the goal of our partner's life work. To serve as your Auxiliary president, is truly a privilege. I shall strive to serve you well. Thank you.

—Janet Ellis (Mrs. H. G.)

Have you moved in the past few months? PLEASE send any changes of address to 529-36th Street, Des Moines 12. Communication is a necessity: Do help us keep our mailing list up to date. You are our best source of accurate information.

Volunteer Health Service Award Recipient

The winner of the State Auxiliary's 1964 Volunteer Health Service Award is an extremely versatile individual.

Florence Cobb McDonald grew up in a lively family including three boys all older than she in Tipton, Iowa. After her graduation from Tipton high school, she went to the University of Illinois, where she pledged AOPi sorority, majored in French, and met her future husband, Elliott Raymond McDonald, who was a law student there.

After graduation, she and Mr. McDonald were married and lived successively in East St. Louis, Peoria, Cedar Rapids, Davenport and Minneapolis, and finally returned to Davenport, where Mr. McDonald established his own legal firm. They have three children, Elliott R., Jr., who practices law with his father; Douglas, who practices law in St. Louis; and Linda, who is in Guinea, West Africa, with her husband, a Peace Corps field officer. The McDonalds have two grandchildren, Beth, 11, and Elliott R., 8.

Mrs. McDonald was a member of the Cavalrettes, a riding club, and was active in Pan-Hellenic while her children were growing up. As their decreasing dependence gave her more time, she devoted herself to community service.

She has been secretary of the Scott County Society for Crippled Children and Adults, Inc., and is chairman of the summer speech clinic committee. For 12 years she has transported handicapped persons to and from swimming sessions and helped them with their therapeutic exercises. She has served on the case committee which reviews applications for wheel chairs, etc., and for five years took a polio patient to Iowa City for treatment. She has also assisted with the Christmas party and summer picnics which the Elks Club gives for the physically handicapped.

Her work on the Scott County Association for Mental Health has included participation in a speakers' bureau and five years as an occupational therapy volunteer at Pine Knoll Hospital. She was instrumental in establishing the Hospital's volunteer program, and currently directs the volunteers who work with women patients. She helps with parties, open houses, and special events, and takes selected patients on shopping expeditions and excursions.

For the past two years Mrs. McDonald has been producing braille texts for the blind, under the auspices of the Temple Emanuel Sisterhood. She has purchased her own brailler, and is a certified braillist. A children's book for the Library of Congress is her latest braille project.

Mrs. McDonald was a Campfire girl as a child, and she has continued the association throughout her life. She has been a leader for Blue Birds, Junior Highs, and Horizon Club girls, and is now in her seventh year on the Campfire board. She



Mrs. McDonald

was president of the board for two years. She has headed the camp committee and remains a member of it. Currently a member of Region Seven's executive committee, she was program chairman for the 1964 regional conference.

She is active in St. John's Methodist Church, and is a member of Chapter JS, PEO, and Octave Thanet Book Club. She also enjoys bowling, swimming and knitting. She has a green thumb, keeps an 11-room house without help, and cares for her own riding horse, a huge dog, and a colony of cats.

In Memoriam

A memorial service in tribute to deceased Auxiliary members, for the past year, was presented on April 27 at the annual state meeting by Mrs. B. F. Kilgore. They were:

Mrs. Harry Burns, Des Moines
Mrs. J. M. Casey, Fort Madison
Mrs. W. H. Grimwood, Fort Madison
Mrs. E. A. Hanske, Bellevue
Mrs. Williard W. Hayne, Des Moines
Mrs. Dean H. King, Spencer
Mrs. N. W. Labagh, Mystic
Mrs. James E. Reeder, Sr., Sioux City
Mrs. W. S. Reiley, Red Oak
Mrs. Malcom A. Royal, Des Moines
Mrs. Eugene Smith, Waterloo

1964 Annual Meeting

The Annual Meeting of the Woman's Auxiliary to the Iowa Medical Society took place on April 27 and 28 at Hotel Savery, Des Moines, with Auxiliaries in the Eastern District as hostesses.

The first business session opened Monday morning, April 27. Mrs. R. A. Sutter, St. Louis, Missouri, regional vice-president of the National Auxiliary, addressed the House of Delegates. Her topic was "Challenges and Opportunities." Mr. Charles Gavin, admissions officer at Carleton College, Northfield, Minnesota, was luncheon speaker, and chose as his topic, "Preparing Your Child for College and Keeping Him There."

The afternoon program opened with a fashion show presented by Wolf's. It was followed by a well attended panel presentation on Auxiliary Goals, with Mrs. S. M. Korson as moderator. Mesdames H. A. Weis, E. B. Dawson, F. P. Ralston, B. R. Goldman, S. P. Leinbach, R. F. Nielsen, and Henry Boe were participants.

Workshops for county presidents and presidents-elect, councilors, and 1964-1965 state chairmen closed the afternoon session.

At the Tuesday morning meeting, the following officers were elected and installed: Mrs. Henry Boe, Sioux City, president-elect; Mrs. S. M. Korson, Independence, first vice-president; Mrs. R. E. Hines, Des Moines, second vice-president; Mrs. M. E. Olsen, Minden, recording secretary; Mrs. B. M. Merkel, Des Moines, treasurer. Mrs. Herbert Shulman, Waterloo, Mrs. N. A. Schacht, Fort Dodge, and Mrs. M. P. Margules, Council Bluffs, are new councilors.

Mrs. Howard G. Ellis, Des Moines, was installed as president for 1964-1965.

Mr. Richard Priebe, public relations manager of W. A. Shaeffer Pen Company, addressed the morning session on "Service Comes from Thinking, Not from Bathtubs." O. D. Wolfe, M.D., president-elect of the Iowa Medical Society and chairman of the Auxiliary's advisory committee, chose "The Bystanders" to present as his message to the House of Delegates.

The Honorable James Bromwell, U. S. Congressman, Second Congressional District of Iowa, R. C. Brown, M.D., Mason City, and F. C. Coleman, M.D., Des Moines, were the luncheon speakers.

Ernest Guyer, of Clermont, Marietta Moravetz, of Ogden, and Patricia Menke, of Salem, were awarded first, second and third prizes by the Iowa Medical Society for their essays entered in the AAPS essay contest. Mrs. Elliott McDonald, of Davenport, was presented the Volunteer Health Service Award.

The Annual Benefit Dance for the Health Education Loan Fund, held at Hotel Fort Des Moines on Tuesday evening, was again a great success. Proceeds of this benefit will assist in financing a deserving student's education in one of the allied health professions. The entire proceeds go to the Loan Fund, for the Standard Medical and Surgical Company financed the entire evening.

In addition to providing hostesses and committee chairmen, the Eastern District provided table decorations, door prizes and favors at the luncheons. The Scott County Auxiliary made beautiful tote bags for all members attending the meeting, thus providing a container in which to carry literature, etc. They also gift-wrapped the pencil, from the Shaeffer Pen Company, that each lady found at her place at the Tuesday luncheon. Participation by each Auxiliary from the eastern area of the state added greatly to the interest of the entire meeting.

The National Conference on Homemaker Services

The National Conference on Homemaker Services was held in Washington, D. C., April 29 through May 1, 1964. The Council has been established at a time when demands for homemaker service and efforts to expand it have reached a new peak. It will provide communication and coordination among established programs, and will assist in the development of new programs. Mrs. Francis Shambaugh, director of the Des Moines-Polk County Home Care-Homemaker Service, was a participant in the Conference. Mrs. Mary Peacock, executive secretary of the Health Division of the Des Moines Council of Social Agencies, and I also had the privilege of attending.

A formal report of the Conference will be published at a later date, but I should like to give you my general impressions of this most stimulating meeting.

We arrived too late for the opening on Wednesday, but in time for the reception in the evening. We are all familiar with receptions where people gather in their own groups and wonder who the strangers are. However, attending this reception reminded me of standing on a diving board and diving in. There were 800 registrants, and all 800 were busy dashing to and fro talking about their own home-care homemaker service, and asking questions about all of the other services. We talked to people from California to Boston, Canada to Texas, and some extremely charming women from England. One was president of the International Council of Homehelp Services. It was evident that all services differ, that the problems connected with them are varied, and that the personnel are certain their own service is the best. We actually came away feeling that our service in Des Moines *is* one of the better ones, but I'm sure others feel the same way about their own.

On Thursday, we had an opportunity to sign up for whichever session was of greatest personal interest to each of us. I spent the entire day in a work group of which Mrs. Asher Yaguda was chairman. That, in itself, was a rewarding experi-

ence. In 1960, when I first heard of homemaker service and was trying to understand what it was, I read many of Mrs. Yaguda's articles. She is one of the pioneers in homemaker service in the United States. Her accomplishments are truly inspirational.

The morning sessions concerned statewide planning, and the afternoon session dealt with local planning. Mrs. Shambaugh was in a difficult position on the program—the last speaker in the afternoon. Each speaker was interesting, but trying to combat sleep at the end of a long day was a problem for all of us listeners. Time was running short, so Mrs. Shambaugh had to condense her talk. I wish all of you could have heard her. She stood up and gave such a rapid fire account of all that had been done in Des Moines and Polk County that everyone was wide awake and intensely interested. She gave full recognition to the Polk County Medical Society and to the Auxiliary of the Polk County Medical Society for their financial aid and stimulus in the establishment of the Des Moines-Polk County Home-Care Homemaker Service. It was rewarding when, after the meeting, many people who had been telling me of the merits of their own program came up and said, "You people in Des Moines really have something going."

On Friday, Mrs. Theodore Wedel, the general conference chairman, was chairman of both the morning session and the luncheon meeting. Mrs. Wedel has been an active church worker for many years. She is a dynamic person who has a marvelous sense of humor.

In the morning Mrs. E. Carnegy-Abuthnott, president of the International Homehelp Service, London, gave an enlightening report of the various services in England and other European countries. Mrs. Delaney talked to homemakers at work in various parts of the United States. In the afternoon, the speaker was Miss Margaret Hickey, of the LADIES' HOME JOURNAL. She has the ability to inspire everyone to exercise her own talents to full measure. My mother attended the luncheon with me, and was inspired by what she heard. I shouldn't be surprised if she became a 75-year-old homemaker. A special feature was recognition of the actual homemakers attending the Conference.

The entire Conference was extremely interesting, but to me the most impressive factor was the very definite religious overtone. Each session began with an invocation and ended with a benediction. In these days of rush and worry, it is well to remember the true motivating force behind all works.

—MRS. ALLAN PHILLIPS,
Polk County chairman,
Homemaker Services

COUNTY AUXILIARIES

Cerro Gordo County

The Cerro Gordo Medical Auxiliary concluded its activities for the season with a supper at the home of Mrs. Harold Morgan of Clear Lake.

A contribution was voted to the AMA Education and Research Fund, and Mrs. Walter Hanson reported on the State Convention.

Mrs. George Tice acted as co-hostess for the evening.

Lee County

Mrs. A. C. Richmond, of Fort Madison, past-president of the Woman's Auxiliary to the Iowa Medical Society, presented checks to the senior high school students who were winners in the A.A.P.S. Contest sponsored by the Lee County Medical Society and its Woman's Auxiliary.

The Contest was open to all senior high school students of Lee County, who were asked to write an essay of not more than 1,500 words on either of the following topics:

"The Advantages of the American Free Enterprise System over Communism," or "The Advantages of Private Medical Practice."

First prize winner, Patricia Menke, daughter of Mr. and Mrs. D. D. Menke of Salem, a student at St. James School, St. Paul. Patricia's essay also won third place in the State contest.

Sixty-five high school students submitted Essays: Thirty were from St. Mary's at West Point; 13 from St. James High School, St. Paul; 15 from St. John's School, Houghton; six from Cardinal Stritch, Keokuk; two from Central Community, at Argyle; and one from Fort Madison Community High School.

Mrs. Frank L. Poepsel, of West Point, was the Woman's Auxiliary Chairman of the Essay Contest in Lee County.

Polk County

For the past five years, the Woman's Auxiliary of Polk County has had a Christmas card project to raise funds for its various community-service activities. In 1963, the funds were divided among: A.M.A.-E.R.F., Broadlawns-Polk County Hospital Guild, Polk County Homemaker Service, Des Moines Speech and Hearing Center, Camp Sunnyside, Polk County Association for Retarded Children, and Vision Screening.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 50312

President-Elect—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

Recording Secretary—Mrs. M. E. Olsen, Minden 51553

Corresponding Secretary—Mrs. C. W. Latchem, 942 56th Street, Des Moines 50312

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Throckmorton, 1201 64th Street, Des Moines 50311

MINUTES OF THE 1964 SESSIONS OF THE HOUSE OF DELEGATES

Iowa Medical Society

Des Moines, Iowa—April 26-29, 1964

(Alphabetical Index to the Minutes Can Be Found on Page 436)

SUNDAY SESSION, APRIL 26, 1964

The House of Delegates of the Iowa Medical Society was called to order by the speaker, Dr. L. J. Halpin, of Cedar Rapids, at 9:15 a.m. Sunday April 26. The House of Delegates approved the taking of attendance by signed registration cards. There were 105 delegates, 11 voting alternates and 16 ex-officio members present.

County	*Delegate*	*Alternate*
Adair		
Adams	A. W. Brunk	
Allamakee		
Appanoose		
Audubon	L. E. Jensen	
Benton	J. E. Blumgren	
Black Hawk	R. C. Miller	
	F. G. Loomis	
	G. D. Phelps	
	A. M. Dolan	
		G. W. Heine
Boone	E. E. Linder	
Bremer	V. H. Carstensen	
Buchanan	P. J. Leehey	
Buena Vista		T. E. Shea
Butler	F. A. Rolfs	
Calhoun	C. R. Wilson	
Carroll	P. T. Cawley	
Cass	J. D. Weresh	
Cedar		G. H. Utley
Cerro Gordo	G. J. Sartor	
	J. F. Paulson	
	L. J. Kirkham	
Cherokee		
Chickasaw	D. L. Trefz	
Clarke	G. I. Armitage	
Clay		
Clayton		
Clinton	M. E. Barrent	
	W. H. Ash	
Crawford	R. A. Huber	
Dallas-Guthrie	W. A. Castles	
	R. J. Peterson	
Davis	J. R. Scheibe	
Decatur	E. E. Gamet	
Delaware	J. E. Tyrrell	
Des Moines	F. G. Ober	
	J. L. Saar	
Dickinson	R. J. Coble	
Dubuque	D. F. Ward	
	K. K. Hazlet	
	D. A. Howell	
Emmet		
Fayette	R. S. Jaggard	
Floyd	R. M. Nielsen	
Franklin	R. E. Munns	
Fremont		
Greene	R. W. Burke	
Grundy		
Hamilton	G. A. Paschal	
Hancock-Winnebago		
Hardin	John Sear	
Harrison	J. W. Barnes	
Henry	R. S. Wettach	
Howard	F. L. Klingle	
Humboldt	Beryl Michaelson	
Ida		
Iowa		
Jackson		
Jasper	J. W. Billingsley	
Jefferson		J. W. Castell
Johnson	K. R. Cross	
	C. R. Eicher	
		Michael Bonfiglio
	G. W. Howe	
	K. J. Judiesch	
	J. M. Layton	
		C. E. Radcliffe
	P. M. Seebohm	
	C. E. Schrock	
Jones	L. D. Caraway	
Keokuk		
Kossuth	R. E. Jongewaard	
Lee	L. C. Pumphrey	
	G. C. McGinnis	
Linn	J. J. Redmond	
	R. M. Chapman	
	J. J. Keith	
	H. R. Hirleman	
	W. J. Robb	
Louisa		
Lucas	T. C. White	
Lyon		
Madison	J. E. Evans	
Mahaska	G. W. Bennett	
Marion	G. K. Van Zee	
Marshall	R. G. Robinson	
	L. O. Goodman	
Mills		M. L. Scheffel
Mitchell		
Monona		
Monroe		
Montgomery	Oscar Alden	
Muscatine	C. P. Phillips	
O'Brien	J. C. Peterson	
Osceola		
Page	G. H. Powers	
Palo Alto		
Plymouth	J. P. Trotzig	
Pocahontas	C. J. Smith	
Polk	A. N. Smith	
	R. B. Stickler	
		John Uchiyama
	J. T. McMillan	
	J. H. Kelley	
	B. M. Merkel	
	H. E. Wichern	
	N. W. Irving, Jr.	
	E. T. Burke	
		John Hess, Jr.
	V. L. Schlaser	
		A. H. Downing
	S. J. Zoeckler	
Pottawattamie	C. V. Edwards, Jr.	
	I. J. Hanssmann	
Poweshiek	J. C. DeMeulenaere	
Ringgold	D. E. Mitchell	
Sac	C. D. Gibson	
Scott	Erling Larson	
	W. S. Pheteplace	
	J. F. Bishop	
	W. D. Edgerton	
Shelby	G. E. Larson	
Sioux	M. O. Larson	
Story	G. E. Montgomery	
	J. D. Conner	
Tama		
Union-Taylor	R. H. Kuhl	
Van Buren		
Wapello	K. E. Lister	
	E. W. Ebinger	
Warren	Amalgamated with Polk County	
Washington		C. A. Boice
Wayne	C. N. Hyatt	
Webster	J. R. Kersten	
	J. F. Kelly	
Winneshiek		
Woodbury	P. M. Cmeyla	
	D. B. Blume	
	M. A. Blackstone	
Worth		
Wright		

LIAISON DELEGATE
C. P. Hawkins

OFFICERS PRESENT AS EX-OFFICIO MEMBERS OF THE HOUSE

C. V. Edwards, Sr.	L. W. Swanson
O. D. Wolfe	H. J. Smith
R. F. Birge	L. J. Halpin
S. P. Leinbach	E. M. Smith
C. W. Seibert	R. C. Hardin
J. H. Sunderbruch	G. H. Scanlon
J. W. Ferguson	Fred Sternagel
W. G. Kuehn	W. D. Abbott

Minutes of the April 10, 1963, meeting of the House of Delegates were approved as published in the July, 1963, JOURNAL OF THE IOWA MEDICAL SOCIETY.

The Speaker of the House of Delegates introduced physicians who were serving in the House for the first time, and also the individuals who were seated at the head table. He announced reference committee appointments.

Reports as published in the 1964 HANDBOOK FOR THE HOUSE OF DELEGATES were approved.

The 17 resolutions that had been published in the HANDBOOK beginning at page 66, were excluded, since they were to be presented at a later time under the heading of "New Business."

(The following are reports previously published in the DELEGATES' HANDBOOK.)

Reports of Officers

FROM THE OFFICE OF THE SECRETARY

The duties of this office include maintaining membership and dues records; conducting the official correspondence; and notifying members of meetings, officers of their election, and committee members of their appointment and duties. The secretary is also responsible for preparing minutes of all official meetings of the Society. Insofar as is in his power, he uses the printed matter, correspondence and influence of his office to aid the councilors in organizing and improving the component societies, and in extending the power and usefulness of the Society.

The following points up some of the more important activities of the office of secretary:

1964 ANNUAL MEETING

The Program Committee has completed the program for the 1964 annual meeting and it appears in the March issue of the JOURNAL OF THE IOWA MEDICAL SOCIETY. Hand programs will be distributed at the time of the meeting. The office has cooperated with district councilors in organizing their caucuses, in preparation for the annual meeting, including organization of the Nominating Committee.

HOUSE OF DELEGATES

Proceedings of the 1963 sessions of the House of Delegates were published in the July, 1963, JOURNAL. The usual administrative procedures in connection with the House of Delegates directives have occurred. As a part of the 1964 annual meeting, the House of Delegates will hold its first session on Sunday, April 26, at 9:00 a.m. Reference committee hearings will begin as soon as possible on Sunday following adjournment of the House. The final session of the House of Delegates will be held at 8:00 a.m., Wednesday, April 29. All sessions of the House of Delegates will be held at the Savery Hotel.

EXECUTIVE COUNCIL

Six meetings of this interim policy-making body have been held since the 1963 annual meeting, and its seventh session will be held on March 19. Progress reports from important committees of the Society were presented to the Executive Council for its action in some instances and for its information in others. These committees will report to the House of Delegates.

JUDICIAL COUNCIL

The Judicial Council, the Society's judicial authority, has held five meetings since the 1963 annual meeting; its sixth session is scheduled on March 19. At the organizational meeting of the Council, which was held on April 10, 1963, Dr. C. E. Radcliffe, of Iowa City, was re-elected chairman, and Dr. K. E. Lister, of Ottumwa, was elected secretary. The Judicial Council's major responsibility has been the approval of applicants for IMS membership. It has considered and disposed of various items of business involving memberships, ethics and other judicial matters.

COMMITTEES

The Society has 49 standing and special committees, most of which have met at least once during the year. Reports covering the activities of these groups appear elsewhere in this HANDBOOK, or will be presented as oral reports at the first session of the House of Delegates in April. To date, approximately 70 official committee meetings have been held, and prior to the annual meeting there will be numerous additional ones. These totals do not include informal meetings of committee members, or the conferences that have taken place by telephone. These latter approximate 125.

LIAISON WITH COUNTY MEDICAL SOCIETIES

Fall Conference for County Society Officers. On September 18, 1963, the IMS was host to approximately 190 physicians who represented county medical societies. These included county society presidents, secretaries, deputy councilors, legislative contact men, delegates, alternates, Blue Shield liaison physicians, county committee chairmen, and State Society officers and committee chairmen. The program included informative discussions of important issues, e.g., affairs of the AMA, Iowa Medical Service (Blue Shield), utilization of medical care, MD-DO relations, IMS building program and Iowa Medical Foundation, health fads and fallacies, implied consent law, Operation Hometown, grievance and judicial problems, the Washington scene, AMPAC and IPPL, report from the School of Medicine in Iowa City, MAA in Iowa, medicine and the press, and reapportionment.

Throughout the year, Society officers, members, and staff, have met with a number of county medical societies. In addition, 16 area meetings were conducted in the fall of 1963, covering the entire state. Programs of these county and area meetings included various subjects and projects of interest to the Society members.

Medical Assistance for the Aged. On Sunday, February 16, 1964, a Conference of County Medical Society Presidents and MAA Review Chairmen was held in Des Moines under the sponsorship of the IMS. Approximately 110 physicians were in attendance. This was a workshop, arranged for the purpose of acquainting representatives of county societies with details of the MAA Program, including the processing of claims at the state and county levels.

FIELD SERVICE

The Society's two field secretaries, Messrs. Gerald Buckles and Morris Bandy, have been active during the past year in contacting county medical societies and individual doctors, as well as other organizations, to promote numerous projects. The major part of their time has been devoted to activating county societies, individual physicians, and allied groups to implement programs in opposition to the enactment of King-Anderson type legislation, as well as other projects in the public interest. On January 2, Mr. Morris Bandy became a full-time administrator of the Iowa Physicians Political League.

MAILINGS

Mailings during the year included: General News Bulletins, 8; Legislative Bulletins, 1; Legislative Contact Men, 1; "In the Public Interest" to members of the Iowa Legislature, Iowa's Congressional delegation in Washington, and all news outlets, 12; Deputy Councilors Newsletters, 3.

NATIONAL, REGIONAL, STATE CONFERENCES

The IMS was represented by one or more delegates at the following conferences during the past year: AMA Annual and Clinical Sessions, AMA Legislative Conference, AMA Osteopathic Conference, AMA Conference on Disaster Medical Care, AMA Conference on Physicians and Schools, AMA Conference on Rural Health, U. N. Week, AMA Council on Occupational Health, AMA Workshop on Motor Vehicle Administration, State Medical Journal Advertising Bureau, AMA Placement Conference, County Medical Society Conference on Disaster Medical Care, AMA Conference on Medical Quackery, AMA Conference on Medical Aspects of Sports, AMA Conference on Medical Service, U. S. Chamber of Commerce Public Affairs Conference, AMPAC, AMA meeting concerning organization of the House of Delegates, AMA Conference on Medical Education, AMA Rural Health Conference, AMA Conference on Medicine and Pharmacy, AMA Mental Health Conference, Blue Shield District X meeting, North Central Medical Conference, Conference on the Extension of Voluntary Health Insurance, Michigan Association of the Professions, Conference for Central District for Health, Physical Education and Recreation, two Regional Rural Health conferences, State Medical Society of Wisconsin Annual Meeting, Annual Meeting of the Iowa Pharmaceutical Association, conference of Iowa Highway Patrol, meetings of the Iowa Interprofessional Association, Annual Meeting of the Iowa Nursing Homes Association, Iowa Veterinary Medical Association Annual Meeting, meetings of the Iowa Medical Assistants' Association, Governor's Conference on Physical Fitness, Diet Therapy conferences, Annual Meeting of the State Medical Society of Minnesota, Annual Meeting of the Iowa Dental Association, Iowa Academy of General Practice Annual Meeting, Program in Practical Political Education, School Health Workshops, Public Health Association, Hawkeye Science Fair, Senior Day, Annual Meetings of Blue Cross and Blue Shield, and Iowa Society of Association Executives.

IOWA REPRESENTATION AT NATIONAL LEVEL

The Society has maintained its close liaison with the AMA and other national organizations. The IMS is represented in the AMA as follows:

Dr. Donovan F. Ward, of Dubuque, vice-president, and a member of the Committee on Medical Practices

Dr. S. P. Leinbach, of Belmond, Vice-Chairman of the Council on Rural Health

Dr. D. C. Conzett, of Dubuque, a member of the Committee on Federal Medical Services

Dr. F. C. Coleman, of Des Moines, chairman, Council on Legislative Activities, and a member of the Board of Directors of AMPAC

Dr. J. G. Thomsen, of Des Moines, chairman of the Committee on Medical Quackery.

The IMS executive director is immediate past-president of the National Association of Medical Society Executives, and is presently a member of its Board of Directors. Miss Tina Preftakes, assistant to the director, is a member of the Editorial Board of THE EXECUTIVE, the house organ of the National Association of Medical Society Executives.

SERVICES TO THE WOMAN'S AUXILIARY

Services and facilities of the IMS headquarters office are available at all times to the Woman's Auxiliary to assist it in implementing its projects. The bulk of this work is handled by Mrs. Hazel Lammey, an executive assistant who is staff secretary to the Auxiliary. The staff assists the Woman's Auxiliary in arranging its annual meeting, preparing its annual reports, and maintaining its membership records and roster, as well as preparing and issuing the WOMAN'S AUXILIARY NEWS.

IMS MEMBERSHIPS

Memberships in the Iowa Medical Society during the year 1963 totaled 2,482 as compared to 2,465 for the preceding year. The 68 counties in which 100 per cent of the county society members held membership in the IMS, comprise 65 county societies. The number of eligible non-members increased by one, for a total of 55 for 1963. The number of ineligible non-members decreased from 48 in 1962 to 47 in 1963. Physicians retired or not in practice increased from 77 in 1962 to 82 in 1963. The total membership percentage in 1963 remains at 98.

COUNTY SOCIETIES HAVING 100 PER CENT MEMBERSHIP IN IMS IN 1963

Adair
Adams
Allamakee
Appanoose
Audubon
Boone
Buchanan
Butler
Calhoun
Cerro Gordo
Chickasaw
Clarke
Clay
Clinton
Crawford
Dallas-Guthrie
Davis
Decatur
Delaware
Dickinson
Franklin
Greene
Grundy
Hamilton
Hancock-Winnebago
Hardin
Harrison
Henry
Howard
Humboldt
Ida
Iowa
Jackson
Jasper
Jefferson
Kossuth
Lee
Lucas
Lyon
Madison
Mahaska
Marion
Marshall
Mills
Monona
Monroe
Montgomery
Muscatine
Osceola
Page
Palo Alto
Plymouth
Pocahontas
Ringgold
Sac
Shelby
Sioux
Tama
Union-Taylor
Wapello
Washington
Wayne
Webster
Winneshiek
Wright

1963 IMS MEMBERSHIP RECORD

County	Active Members	Associate Members	Resident Members on Resident License	Eligible Non-members	Ineligible Non-members	Not in Practice or Retired	Percentage
Adair	3	1	..	..	..	..	100
Adams	4	..	..	..	..	..	100
Allamakee	8	..	..	..	..	1	100
Appanoose	10	..	..	..	..	2	100
Audubon	4	..	..	..	..	..	100
Benton	11	..	..	1	..	..	92
Black Hawk	127	1	..	1	..	..	99
Boone	17	..	..	..	..	..	100
Bremer	16	..	..	1	..	..	94
Buchanan	27	..	..	..	4	..	100
Buena Vista	11	1	..	2	..	..	86
Butler	9	..	..	..	..	..	100
Calhoun	13	..	..	..	..	1	100
Carroll	22	1	..	1	..	..	96
Cass	9	..	..	2	..	..	82
Cedar	9	..	..	1	..	..	90
Cerro Gordo	72	..	..	..	..	..	100
Cherokee	25	..	..	3	11	1	89
Chickasaw	11	1	..	..	..	..	100
Clarke	5	..	..	..	..	..	100
Clay	13	..	..	..	..	..	100
Clayton	9	1	..	2	..	..	83
Clinton	44	2	..	..	2	..	100
Crawford	8	..	..	..	..	..	100
Dallas-Guthrie	23	..	..	..	6	1	100
Davis	13	..	..	..	..	..	100
Decatur	6	..	..	..	..	2	100
Delaware	10	..	..	..	..	1	100
Des Moines	45	2	..	2	..	..	96
Dickinson	9	..	..	..	..	..	100
Dubuque	72	3	..	1	..	..	98
Emmet	13	..	..	1	..	..	93
Fayette	20	..	..	1	..	1	95
Floyd	17	..	..	1	..	..	94
Franklin	6	..	..	..	..	..	100
Fremont	4	..	..	1	..	..	80
Greene	12	..	..	..	..	1	100
Grundy	8	..	..	..	..	..	100
Hamilton	12	..	..	..	1	..	100
Hancock-Winnebago	13	..	..	..	1	1	100
Hardin	18	..	..	..	..	..	100
Harrison	8	..	..	..	..	3	100
Henry	21	..	..	..	6	3	100
Howard	9	..	..	..	..	..	100
Humboldt	7	..	..	..	..	..	100
Ida	7	..	..	..	..	2	100
Iowa	12	..	..	..	..	..	100
Jackson	12	..	..	..	..	..	100
Jasper	21	..	..	..	..	..	100
Jefferson	12	..	..	..	..	1	100
Johnson	219	2	1	5	..	5	98
Jones	12	..	..	2	..	..	86
Keokuk	6	..	..	1	..	..	86
Kossuth	12	..	..	..	..	..	100
Lee	38	..	..	..	..	..	100
Linn	133	4	..	2	..	3	98
Louisa	3	..	..	2	..	..	80
Lucas	7	..	..	..	..	..	100
Lyon	6	..	..	..	..	..	100
Madison	6	..	..	..	..	..	100
Mahaska	16	1	..	..	..	..	100
Marion	16	..	..	..	..	7	100
Marshall	42	..	..	..	..	..	100
Mills	4	..	..	..	5	1	100
Mitchell	11	..	..	2	..	1	86
Monona	11	..	..	..	..	2	100
Monroe	4	1	..	..	..	..	100
Montgomery	11	..	..	..	..	..	100
Muscatine	17	1	..	..	1	1	100
O'Brien	12	..	..	1	..	..	93
Osceola	4	..	..	..	..	..	100
Page	19	.	..	..	6	..	100
Palo Alto	9	..	..	..	..	..	100
Plymouth	12	..	..	..	..	1	100
Pocahontas	7	..	..	..	..	1	100
Polk	329	17	7	2	1	22	99
Pottawattamie	75	..	..	2	1	4	97
Poweshiek	8	..	..	4	..	..	67
Ringgold	1	..	..	..	..	..	100
Sac	8	..	..	..	..	..	100
Scott	100	..	..	1	..	3	99
Shelby	8	..	..	..	..	2	100
Sioux	13	..	..	..	..	1	100
Story	52	1	..	3	..	1	95
Tama	10	..	..	..	..	..	100
Union-Taylor	13	1	..	..	..	..	100
Van Buren	2	..	..	2	..	..	50
Wapello	51	1	..	..	..	..	100
Warren amalgamated with Polk							
Washington	12	..	..	..	..	2	100
Wayne	4	2	..	..	..	..	100
Webster	59	..	..	..	..	2	100
Winneshiek	9	..	..	..	..	..	100
Woodbury	115	3	..	5	2	2	96
Worth	4	..	..	1	..	..	80
Wright	20	..	..	..	..	..	100
	2,427	47	8	55	47	82	98

AMA MEMBERSHIP

The members of the Iowa Medical Society who were active members of the American Medical Association in 1963 numbered 2,370 (including those who were active dues-exempt because of life membership, residency or military service). In addition, 47 held associate memberships, 9 held service memberships (in Veterans Administration), and 8 held resident memberships (members on temporary or resident licenses) in the AMA.

The 2,370 active AMA memberships in 1963 entitled Iowa to three AMA delegates. The 1963 AMA membership was 95.49 per cent of the total Iowa Medical Society membership.

R. F. BIRGE, M.D., *Secretary*

REPORT OF THE TREASURER

The following financial statements set forth the fiscal status of the Iowa Medical Society. Operation for the year 1963 resulted in an excess of expenses over income of $23,232.89. This is the third year in succession that the Society has experienced a deficit with a corresponding decrease in reserves and net worth.

In 1963 a contribution from the Baldridge-Beye Memorial Fund in the amount of $2,148.00 was made to the Iowa Medical Foundation. The contribution represents the assignment of $1.00 for each dues-paying member of the Iowa Medical Society.

V. L. SCHLASER, M.D., *Treasurer*

IOWA MEDICAL SOCIETY

Balance Sheet—December 31, 1963

ASSETS

Current Assets:		
IMS Checking Accounts	$ 188.35	
Cash on Hand	619.47	
Government Securities	5,000.00	
Medicare	5,000.00	
Notes Receivable (Baldridge-Beye)	1,250.00	
Pension Insurance—Due from Employees	1,367.92	
Total Current Assets		$ 13,425.74
Fixed Assets:		
Land	$ 77,500.00	
Building (Depreciated Value)	17,275.85	
Provision for Building Fund	29,361.40	
Net Fixed Assets		$124,137.25
TOTAL ASSETS		$137,562.99

LIABILITIES AND NET WORTH

Liabilities:		
Accounts Payable	$ 9,484.58	
Accrued State Personal & Property Tax	2,275.08	
Baldridge-Beye Memorial Fund Notes 12-31-63	1,250.00	
Total Liabilities		$ 13,009.66
Net Worth:		
Balance 1-1-63	$137,496.76	
Less: Net expense 1963	23,232.89	
	$114,263.87	
Investment Income in Corporation Common Stock (Net):		
Balance 1-1-63	$ 5,280.56	
Add: Net Income 1963	3,647.04	
	8,927.60	
Investment Income—Building Fund:		
Balance 1-1-63	$ 396.46	
Add: Net Income 1963	965.40	
	1,361.86	
Total Net Worth		$124,553.33
TOTAL LIABILITIES AND NET WORTH		$137,562.99

IOWA MEDICAL SOCIETY
STATEMENT OF INCOME AND EXPENSES

For the Year Ended December 31, 1963

Income for the Year 1963:		
Dues—State Society	$193,490.00	
Interest on Investments	613.26	
Medicare	1,299.89	
AMA Collection Commission	935.55	
Miscellaneous	348.91	
TOTAL INCOME		$196,687.61
Expenses for the Year 1963:		
Annual Session (Net)	$ 1,211.36	
Baldridge-Beye Memorial Fund	2,148.00	
Council Expense	3,065.25	
Council Society Services	2,291.11	
Depreciation—Building	4,500.00	
Dues and Subscriptions	1,966.75	
General Administrative Expense	1,527.91	
Insurance	2,327.53	
JOURNAL (Net)	19,605.92	
Legal Expense	6,781.47	
Lights, Gas & Water	1,265.09	
Office Furniture & Fixtures	529.20	
Office Stationery & Supplies	4,396.54	
Pension and Disability Insurance	5,294.08	
Postage	4,405.36	
Repairs and Maintenance	373.44	
Salaries	83,097.86	
Service Contracts—Machines	633.47	
Taxes:		
Personal and Property	2,285.70	
Social Security	2,387.30	
Federal Unemployment	336.56	
State Unemployment	97.44	
Use Tax	680.55	
Telephone and Telegraph	7,185.43	
Travel—Officer	8,400.57	
Travel—Salaried Employee	14,185.35	
Trustee Expense	3,009.46	
Woman's Auxiliary	1,789.55	
Committee Expense:		
Grievance	524.59	
Legislative	16,988.77	
Medical Service	7,158.40	
State Department	624.05	
Public Relations	6,052.01	
Other Committees	2,788.43	
TOTAL EXPENSE		$219,920.50
Net Expense for 1963		$ 23,232.89

BOARD OF TRUSTEES

A comprehensive report on activities of the Board of Trustees will be presented at the first session of the House of Delegates in April. It will include information on IMS building plans, relations with Blue Shield and the Iowa Medical Foundation, as well as on all general activities.

Delegates and alternates are urged to study carefully all of the reports incorporated in this HANDBOOK, and especially those of the secretary and the treasurer. As a part of its Supplemental Report, the Board of Trustees will discuss all of the fiscal affairs of the IMS.

S. P. LEINBACH, M.D., *Chairman*

REPORT OF THE JUDICIAL COUNCIL

Acting upon a request from officers of the IMS Grievance Committee for a change of rules to permit that body to consider a "pattern of behavior"—i.e., similar blameworthy acts previously brought to the Grievance Committee's attention—in penalizing physicians, the Judicial Council asked IMS legal counsel to review and, if necessary, revise the rules of the Grievance Committee. Three councilors were appointed to consult with the lawyers and the Grievance Committee officers on this project.

On November 21, the Judicial Council considered and approved a new set of rules for the Grievance Committee, and after the members of the Grievance Committee had likewise approved them, they were published in the February, 1964, JOURNAL OF THE IOWA MEDICAL SOCIETY. The principal changes effected by the rules revision are: (1) A "pattern of behavior" can henceforth be taken into account by the Grievance Committee, in cases where there is one. (2) The Grievance Committee may arbitrate the issues brought before it, but if it decides that disciplinary action is warranted, it must bring charges against the physician to the attention of the Judicial Council. (3) The quorum requirement is reduced, and the times and places of meetings are left for the Grievance Committee officers to determine. (4) The requirement that a Grievance Committee member be excluded from the consideration of an issue involving a physician who practices in his district was eliminated. (Since this requirement, in the previous set of Grievance Committee rules, duplicated a passage in the IMS By-Laws, its elimination will not become effective until the House of Delegates has repealed the pertinent paragraph of the By-Laws.) As provided in the IMS By-Laws, the revised Grievance Committee rules became effective when they were published in the JOURNAL.

At its sessions since the 1963 annual meeting, the Judicial Council has approved 84 osteopathic physicians as individuals "with whom it shall not be considered unethical for doctors of medicine to associate professionally." Just one such man had been approved previously, so the number of such approvals now totals 85.

At its meeting on August 28, 1963, the Judicial Council, at the request of the MD/DO Liaison Committee, refused that status to 14 D.O.&S's. At its meeting on November 21, 1963, however, the Council failed to disapprove one additional D.O.&S. because it had been told no reasons why it should do so. On December 12, 1963, representatives of the Council met with the IMS Osteopathic Committee to discuss a modification of the disapproval procedure, and it was agreed that thenceforth the Council's notifications of disapproval should contain the words "at the recommendation of the medical society in your county." Thus, though notifications will continue emanating from the Judicial Council, the responsibility will be correctly placed at the county level.

The Judicial Council received an inquiry from Robert C. Hardin, M.D., dean of the S.U.I. College of Medicine, about the propriety of his school's inviting "approved" DO&S's to its postgraduate short courses, and it replied that the IMS would have no objection to the presence of those men at such meetings.

It ruled, however, that a M.D. who had been invited to address an osteopathic group including both approved and unapproved practitioners could not ethically comply.

At the request of C. V. Edwards, Sr., M.D., president of the IMS, the Judicial Council agreed to discipline any doctors whom a county committee or the state claims-review committee might find recalcitrant about charging the "usual and customary" fees for service rendered to MAA beneficiaries.

It granted release from probation, in August, to a physician who demonstrated that he had complied with the demands it had made of him in February, at the conclusion of a formal hearing on charges that had been made against him. It also received and acknowledged evidence that a physician whom it had placed on probation in March, had endeavored to comply with the demands it had made of him, but ordered that he await further instructions regarding his probation.

The Judicial Council decided at its meeting on November 21, 1963, to seek clarification of AMA policy before considering a proposal from the IMS Interprofessional Activities Committee that ". . . ownership of a pharmacy by a physician or a group of physicians shall be considered unethical, if adequate pharmaceutical service is readily available." It hasn't again taken up that matter.

In addition to the above activities your Council has been a "listening post" at the Executive Council level. We expect and invite you to bring relevant problems to us. When communications are adequate, misunderstandings will diminish and our Society will function more smoothly and ably.

C. E. RADCLIFFE, M.D., Chairman (7th District), Iowa City
K. E. LISTER, M.D., Secretary (9th District), Ottumwa
C. L. KELLY, JR., M.D. (1st District), Charles City
J. F. PAULSON, M.D. (2nd District), Mason City
J. L. POWERS, M.D. (3rd District), Estherville
W. M. KRIGSTEN, M.D. (4th District), Sioux City
N. W. IRVING, JR., M.D. (5th District), Des Moines
J. W. FERGUSON, M.D. (6th District), Newton
F. G. OBER, M.D. (8th District), Burlington
W. G. KUEHN, M.D. (11th District), Clarinda

Reports of Standing Committees

COMMITTEE ON LEGISLATION

As is customary, the Committee report will be divided into two sections; one on national legislation and the other on state legislation.

NATIONAL LEGISLATION

King-Anderson Bill: During November, 1963, and again in January, 1964, the House Ways and Means Committee conducted hearings on H.R. 3920, the current King-Anderson Bill, and alternate proposals. As is well known, the hearings were interrupted in November by the tragic and untimely death of President Kennedy. In January, only those witnesses whom the Committee had not had the opportunity to hear in November were rescheduled for appearance. Although representatives of the Iowa Medical Society did not appear in person before the Committee, a statement of opposition to the King-Anderson Bill was filed with the House Ways and Means Committee. As this report is written, the House Ways and Means Committee has not yet held executive hearings on the King-Anderson Bill, but such hearings are expected within the near future. The Committee on Legislation will continue to maintain constant liaison with the Iowa delegation in Washington and the AMA Washington Office,

so that the physicians of Iowa may be immediately notified of developments regarding the King-Anderson Bill and other such legislative proposals.

Organized medicine is faced with an extremely difficult legislative battle, since the forces interested in supporting this type of legislation continue to press for its enactment. The Committee on Legislation urges each and every physician to be prepared for an all-out effort to defeat any move to attach financing for medical care for the aged to the Social Security system. Such an effort requires not only the official support of the Iowa Medical Society but individual support by each and every physician and by medicine's friends.

Other National Legislation: The Committee on Legislation is kept up to date on the status of all national legislation of medical interest through numerous bulletins and publications of the American Medical Association, in addition to the Society's contact with members of the Iowa Congressional delegation in Washington. Every year more bills are introduced which deal with health, and the AMA is to be commended for its efforts in seeing that the medical profession's point of view is properly presented to members of Congress.

Annual Washington Conference: Representatives from the Iowa Medical Society met with members of the Iowa Congressional delegation in Washington, D. C., on February 7, 1964. This year, the annual Washington visit was planned to coincide with a Public Affairs Conference sponsored by the United States Chamber of Commerce. It should be mentioned that of the 13 representatives from the State of Iowa at the Chamber of Commerce Public Affairs Conference, seven represented the medical profession. Such men as Governor Nelson Rockefeller and Senator Barry Goldwater spoke before the Public Affairs Conference. The meeting also provided opportunity for those in attendance to visit with Congressional leaders and obtain their viewpoints on pressing legislative matters.

The Iowa Medical Society representatives were complimented that all members of the Iowa Congressional delegation and their top administrative assistants were able to join with the IMS contingent at a noon luncheon on February 7. Those attending from Iowa cannot recall a time when the Washington scene was so active. The Senate was considering the tax-cut proposal, and the House was in the midst of the civil-rights debate. In spite of this fact, each Congressman and Senator made a special effort to be at the luncheon. We were naturally pleased and feel that this is indicative of the relationship that has developed between the Iowa Medical Society and the Iowa Congressional delegation throughout the past several years. The Committee believes that the annual trip to Washington is one of the most worthwhile projects conducted by the Iowa Medical Society and certainly recommends that it be continued. Consideration should also be given to planning future trips in conjunction with the Public Affairs Conference conducted by the United States Chamber of Commerce.

STATE LEGISLATION

As this report is written, the Iowa General Assembly is in extraordinary session, considering reapportionment of the Iowa Legislature. Although it is not contemplated that this special session will deal with medical legislation, the State Society is maintaining liaison with the General Assembly to see that medicine's position is presented to members of the Iowa General Assembly, if this becomes necessary.

The Committee once again wishes to express its appreciation to County Legislative Contact Men, who continue to perform a most valuable and indeed an indispensable function. This line of communication has been utilized time and again to aid the Committee in carrying out the duties with which it has been charged.

HOMER E. WICHERN, M.D., *Chairman*

NECROLOGY COMMITTEE

The following members of the Iowa Medical Society died during 1963:

	Age
Glenn J. Anderson, Winterset	65
Byron M. Biersborn, State Center	67
James H. Bruce, Fort Dodge	86
Walter V. Campbell, Oskaloosa	65
Chester F. Cashman, Hartley	82
Gerald V. Caughlan, Council Bluffs	77
John H. Chittum, Wapello	96
Frank E. Cressler, Churdan	85
William F. Dean, Osceola	102
Chester Demaree, Lacona	77
Russell C. Doolittle, Clearwater, Florida	77
Harold E. Farnsworth, Storm Lake	73
June M. Fisher, Iowa City,	39
Charles I. Fox, Port Isabel, Texas	90
Royal F. French, Marshalltown	80
John F. Gray, Melcher	90
Carl B. Hickenlooper, Winterset	79
Charles W. Ihle, Norfolk, Nebraska	85
James M. Jackson, Fort Bragg, North Carolina	89
Lora D. James, Fairfield	81
Peter E. James, Audubon	85
Cecil C. Jones, Des Moines	71
John C. Kassmeyer, Dubuque	78
Dean H. King, Spencer	58
Clifford W. Losh, Des Moines	80
James J. Noonan, Marshalltown	69
Henry M. Pahlas, Rockford, Illinois	79
Robert S. Reimers, Fort Madison	78
Floyd W. Rice, Des Moines	75
Victor T. Scoville, Sioux City	53
Cecil R. Smith, Wyoming	64
John E. Smith, Clarence	91
Martin O. Stauch, Moorhead	74
Charles B. Taylor, Claremont, California	96
Jeannette Dean-Throckmorton, Des Moines	79
Scott L. Throckmorton, Chariton	69
Charles L. Updegraff, Boone	76
Elmer P. Weih, Clinton	75
Delano Wilcox, Malcom	91
Benjamin F. Wolverton, Cedar Rapids	68
Clarence M. Wray, Iowa Falls	87
Edmund G. Zimmerer, Des Moines	74

MEDICO-LEGAL COMMITTEE

No cases have been referred to the Medico-Legal Committee, and no business has been referred to this Committee. Therefore, no meetings have been held.

VAN C. ROBINSON, M.D., *Chairman*

COMMITTEE ON ARTICLES OF INCORPORATION AND BY-LAWS

In response to a recommendation of the Judicial Council, the Committee on Articles of Incorporation and By-Laws will consider preparing an amendment for presentation at the first session of the House of Delegates in April, to permit a member of the Grievance Committee to participate in a hearing involving a defendant in his district, unless he (the Grievance Committee member) requests to be excluded.

If other amendments are suggested on or before April 26, 1964, they will be put into proper order for presentation.

L. J. O'BRIEN, M.D., *Chairman*

COMMITTEE ON MEDICAL SERVICE

In 1963, by action of the Executive Council, the Committee on Medical Service was asked to conduct a study of Iowa hospitals to determine how many of these hospitals had functioning utilization committees, and to evaluate the actual operation of committees that had been established. As a first step, the Committee contacted the chief of staff of each Iowa hospital, requesting that he indicate whether or not his hospital had a utilization committee. Ten hospitals indicated they had functioning utilization committees. A personal visit was then made to each hospital utilization committee by a staff member of the Iowa Medical Society, and a detailed questionnaire was completed for each. A summary of the utilization survey is now complete, and the Committee will be meeting in the near future to consider recommendations to the proper policy-making body of the Iowa Medical Society.

Several resolutions were referred to the Committee on Medical Service by the 1963 House of Delegates, and recommendations formulated by the Committee on these resolutions will be submitted to the House of Delegates for consideration in a supplemental report.

The Committee was represented at a "Conference on Extension of Voluntary Health Insurance" sponsored by the Wisconsin Physicians' Service and held in Madison, Wisconsin, on November 19-20, 1963.

The Iowa Medical Society continues to serve as fiscal agent for the Department of Defense in administering the Medicare Program, and has paid to Iowa physicians approximately $275,000 throughout the past 12 months.

Each member of the Iowa Medical Society recently received the new and expanded edition of the HANDBOOK OF RESOURCES AVAILABLE TO PHYSICIANS. This book should prove extremely valuable to physicians and their office assistants in answering the numerous questions that arise regarding medical services and facilities.

GEORGE G. YOUNG, M.D., *Chairman*

COMMITTEE ON STATE DEPARTMENTS

There was no formal meeting of the Committee on State Departments, which is made up of the chairmen of the following subcommittees: Maternal and Child Health, Aging and Chronic Illness, Rehabilitation, Safe Transportation, and Public Assistance. It is anticipated that designated liaison people from the respective State of Iowa Agencies concerned will meet with the subcommittees on our invitation—as ex officio members. It is hoped this arrangement will facilitate a two-way flow of communication. We expect that this new Committee on State Departments (which replaces the old Committee on Public Health) will have the following functions: to advise all state departments operating health-care or public-health programs, and to inform the Iowa Medical Society of any innovations in the programs of those state departments. Then, the Society can coordinate its own efforts, develop consistent policies in regard to these programs, and cooperate with the state agencies.

The chairman of the Committee on State Departments and the members of the Executive Council of IMS, together with IMS staff members, met with Dr. F. H. Top, chairman of the Board of Health of Iowa, in December. The chairman and Mr. Eldon Huston, an IMS staff member, met with the Board of Health on January 14, to explain the purposes of this Committee and of its two subcommittees relating to the Department of Health.

The Committee had a representative at the annual meeting of the Iowa Welfare Association. But most of this year has been spent in preparing for the Committee to get "off the ground" next year.

C. P. HAWKINS, M.D., *Chairman*

SUBCOMMITTEE ON MATERNAL AND CHILD HEALTH

The Subcommittee was represented at the American Medical Association's Ninth National Conference on Physicians in Schools held in October, 1963. The Subcommittee representative was impressed by the manner in which the conference was organized and the capabilities of the full-time physicians assigned this responsibility by the American Medical Association. The meeting was quite stimulating and informative.

The United States Congress, in 1962, enacted a national vaccination assistance act. Under this act, funds are available to the states to promote and intensify vaccination programs. Representatives of the Iowa State Department of Health appeared before the Subcommittee to present the proposed program for Iowa. The Subcommittee favorably considered the program and recommended to the IMS Executive Council that the Iowa Medical Society approve the plan formulated by the Iowa State Department of Health.

The Subcommittee has also been considering the subject of protective glasses for public school children participating in courses such as vocational or industrial arts, shops or laboratories. Contact is being made with other organizations interested in this problem and an appropriate recommendation will be presented to the House of Delegates regarding legislation in this area. This will be the subject of a supplemental report.

The Subcommittee is also vitally interested in exploring the problem of legal protection for physicians rendering services to children injured while at summer camp. This problem has arisen in several areas, and the Subcommittee is now in the process of exploring what steps the Iowa Medical Society might take to obtain protection for physicians involved in this area.

J. J. SPEVAK, M.D., *Chairman*

SUBCOMMITTEE ON PUBLIC ASSISTANCE

The Subcommittee on Public Assistance has held two meetings during the past year—the first in May, 1963, and the second in February, 1964. Early in 1963, the Subcommittee was called into session to discuss

and make recommendations to the Executive Council concerning implementation of the Medical Assistance to the Aged program in Iowa. The Subcommittee forwarded several recommendations to the Executive Council, and since the action taken by the Council and the subsequent implementation of the MAA program in Iowa are well known, this report will include no further comment on those matters.

At the February, 1964, meeting, the principal discussion centered around the subject of drug costs under the Vendor Payment Program and the modes of practice of one or two physicians that had been brought to the attention of the Subcommittee and the Board of Social Welfare. The Committee considered in some detail the present method of reviewing questionable claims under the Vendor Payment Program. In the past, these claims have been referred to the Iowa Medical Society from the State Board of Social Welfare and have been considered by the Medicare Claims Committee. This method, in the opinion of the Subcommittee, has proved ineffective. There seem to be several reasons for this state of affairs, but the major ones are:

1. The Medicare Claims Committee is not sufficiently familiar with all aspects of the Vendor Payment Program, and the Committee seems to have little power or influence over physicians whose claims have been submitted to the Committee for consideration. The Subcommittee on Public Assistance feels strongly that the IMS must provide proper mechanisms for reviewing these Vendor Payment claims, so that the State Board of Social Welfare, the Legislature and the public can feel assured that physicians are voluntarily making every effort to control the members of the profession.
2. The great majority of cases referred to the IMS do not involve simple matters of overcharging for specific procedures. Rather, most cases seem to involve alleged overprescribing and overtreating, improper utilization, and possibly fraudulent claims. The Committee feels that other mechanisms within the structure of the IMS would be more effective in dealing with these matters, and it has recommended to the Board of Trustees that in the future, claims referred to the IMS by the State Board of Social Welfare under the Vendor Payment Program should be originally considered by the Subcommittee on Public Assistance, and that the Subcommittee, after perusing the claims, should determine whether or not to refer the individual case to the IMS Grievance Committee or to handle the matter itself. That recommendation was approved, and in the future, Vendor Payment cases forwarded to the Medical Society will be handled in the above-described manner.

The Subcommittee on Public Assistance realizes that these matters can best be resolved by local county committees, conferring with the physician in question with a view to resolving the obvious problems involved. Naturally this is not always possible, and the mechanism outlined is being formulated to handle those cases that cannot be resolved at the local level.

At least from the viewpoint of the Subcommittee on Public Assistance, this year has progressed with a minimum of problems in the operation of the Vendor Payment Program.

The Medical Assistance to the Aged Program, which is under the jurisdiction of the State Board of Social Welfare, will not be a direct part of this Subcommittee's responsibility, although several members of this Committee have been appointed to serve also on the Subcommittee on Medical Aid to the Aged, which was created to work with the State Board of Social Welfare in the operation of the MAA program.

The chairman expresses gratitude to the members of the Committee and to the staff of the Iowa Medical Society for their dedicated efforts to the task at hand.

ISAAC STERNHILL, M.D., *Chairman*

SUBCOMMITTEE ON MEDICAL ASSISTANCE TO THE AGED

In the interest of keeping the Old Age Assistance and Medical Assistance to the Aged program separate and distinct, in terms of Iowa Medical Society policy consideration, the IMS president recently appointed a Subcommittee on MAA that will be responsible for all negotiations with the Board of Social Welfare and other parties where the Medical Assistance to the Aged program is involved.

The Subcommittee on MAA represents a combining of the physicians who negotiated the MAA program with the Board of Social Welfare, and the members of the present Subcommittee on Public Assistance. This merging was done not only to utilize the experience and knowledge of physicians familiar with medical welfare programs but also to enable the two Subcommittees to meet jointly with the State Board of Social Welfare when policies regarding the Old Age Assistance and Medical Aid to the Aged programs are being discussed.

The Subcommittee on Medical Assistance to the Aged met with the State Board of Social Welfare in February, 1964. Since the MAA program had been in operation only a short time prior to the meeting, the discussion included only a brief review of the number of people who had applied for MAA and of several interesting statistics regarding this group. Problems that arise between now and the time of the annual meeting will be dealt with in a supplemental report.

WM. J. MORRISSEY, M.D., *Chairman*

SUBCOMMITTEE ON AGING AND CHRONIC ILLNESS

No matters have been referred to the Committee and no meetings have been held.

It is anticipated that when the new Acting Commissioner of Health has taken office, the subcommittees of the parent Committee on State Departments will become more active.

N. W. IRVING, JR., M.D., *Chairman*

SUBCOMMITTEE ON REHABILITATION

The chairman of the Subcommittee on Rehabilitation has no report to submit.

CARROLL B. LARSON, M.D., *Chairman*

SUBCOMMITTEE ON SAFE TRANSPORTATION

The Committee is pleased to report that the two-year survey conducted in Iowa to determine causes of injuries and deaths to occupants of late-model passenger cars involved in accidents was completed on January 31, 1964. The survey was conducted by the Cornell University Automotive Crash Injury Research Division, in cooperation with the Iowa Medical Society, the State Department of Health, the Iowa Hospital As-

sociation, and the Iowa Highway Patrol. Physicians in all 99 counties took part in this important project.

Although it will be some time before a detailed analysis of the survey is completed, a representative from ACIR met with the Committee on February 26, 1964, to present a progress report on findings to date. Other guests at this meeting were representatives from the State Department of Health and the Department of Public Safety.

Following passage of the Liquor Control Act, the Committee met with the assistant attorney-general for the State of Iowa, and representatives of the Iowa Association of Pathologists, the Highway Patrol and the State Department of Health, to review implied-consent provisions which are included in the law. Those present concurred that the Implied Consent Law, in its present form, is not clearly defined in reference to both enforcement and testing procedures. Representatives of the Society offered assistance in developing appropriate procedures for implementing the Implied Consent Law in Iowa, especially in connection with chemical testing, although it was generally acknowledged that many questionable points would have to be settled or clarified either by the attorney-general, or in the courts.

In July, the Department of Public Safety sponsored a two-day Implied Consent Conference for law enforcement officers throughout the state. The Committee chairman and other Society representatives participated in this conference, and answered many questions concerning the doctor-patient relationship; procedures involved in urine, blood, saliva and breath tests; the accuracy and dependability of such tests; and other points relating directly to testing procedures, and the responsibilities of physicians under this law.

The Committee has been provided copies of recent AMA actions and recommendations concerning "Medical Aspects of Driver Limitation" for study and consideration at the meeting which will be held in late February. The AMA opposes compulsory physical examinations for issuance of drivers' licenses, but urges physicians to assume leadership in the development of sound medical criteria for driver licensing, since the diagnosis of medical conditions affecting the ability of an individual to operate a motor vehicle is the responsibility solely of the physician.

The AMA believes that the recognition and appropriate handling of "driver limitation," defined as a condition or state due to physical and/or mental factors which result in impairment of the ability to operate a motor vehicle safely, will contribute markedly to automobile-accident prevention. It is recommended by the AMA that a medical examination for "driver limitation" be conducted at least under the following conditions: (1) when a license applicant displays an obviously impaired physical function; (2) when a driver has been involved in multiple accidents within a short calendar period; (3) When a driver must be placed in the "assigned risk" pool for insurance underwriters because of refusal by various commercial carriers to assume the risk; and (4) when a driver voluntarily suggests that he "blacked out" or that medical problems contributed to an accident.

Governor Hughes has announced the formation of a Governor's Traffic Safety Co-ordinating Committee composed of state officials, and the IMS Committee on Safe Transportation has offered to serve in an advisory capacity, and to assist in any way possible in promoting highway safety.

The Society continues to secure films on automotive safety for use by schools throughout the state, as a public service.

A. H. DOWNING, M.D., *Chairman*

SUBCOMMITTEE ON NERVOUS AND MENTAL DISEASES

During the past year this Subcommittee did not have a chairman, and no formal meetings of the Subcommittee were held.

The Subcommittee was represented at the AMA's Tenth Annual Conference of State Mental Health Representatives, in Chicago, on February 14 and 15, 1964. Most of the meeting was devoted to consideration of community mental health programs.

In October, 1963, Congress passed two legislative measures which will substantially affect statewide activities in the field of mental retardation and community mental health. These acts allocate federal matching funds to be used by the states to plan for comprehensive mental retardation programs and for the construction of facilities for the mentally retarded. Other recent federal legislation has been concerned with developing mental health services and facilities at the local level.

The IMS Subcommittee members individually and collectively have followed and will continue to follow the development of state plans very closely in order to see that the proper medically oriented programs are instituted, to implement this new federal legislation.

H. C. MERILLAT, M.D., *Member*

GRIEVANCE COMMITTEE

The Grievance Committee held only three meetings during the past year, with the smallest number of cases brought before it in many years. A total of ten cases were considered. Three of these cases were from the previous year and were submitted to the Judicial Council for final action. During the last few years, there has been a steady decrease in the number of cases brought before the Grievance Committee for action. We feel physicians of the state have cooperated in a very satisfactory manner with previous recommendations of this Committee, and this has resulted in the decreased load.

In cooperation with the Judicial Council, "Revised Rules for the IMS Grievance Committee" were developed and presented to the Society in the February, 1964, issue of the JOURNAL OF THE IOWA MEDICAL SOCIETY.

H. C. MERILLAT, M.D., *Chairman*

COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

In its Supplemental Report to the House of Delegates in 1963, the Committee on Medical Education and Hospitals recommended (1) that extreme care be exercised in the development of any program to compensate interns and residents, in order to protect the fiscal soundness of hospitals; and (2) that there be an equitable representation of physicians in private practice and medical educators on the AMA Council on Medical Education, in an effort to assure physicians

not in academic medicine a more powerful voice in establishing policies and programs. The House authorized appropriate representatives of the Society to support these positions at AMA reference committee hearings, which were held at the time of the 1963 AMA Annual Meeting in Atlantic City, New Jersey.

In reference to these matters, the AMA House of Delegates took the following actions in Atlantic City:

a. Opposed any system or program by which any part of an intern's or resident's salary is paid out of fees collected by the attending physician, or out of fees collected under any type of medical-surgical insurance coverage.

b. Approved an alteration in the AMA By-Laws, as follows: "The Council on Medical Education shall consist of 10 active or service members, at least one of whom shall be a private practitioner of medicine who is not a faculty member, nor a member of a staff of a hospital associated with a medical school or university."

Dr. C. N. Hyatt represented the Committee at a Working Conference on Methodology of Area-Wide Planning for Hospitals and Related Health Facilities, which was held in Kansas City, Missouri, April 29-May 2, 1963, Dr. Hyatt provided a written report to the Committee, with the following conclusions:

a. The purpose of area-wide planning is to coordinate the efforts of all health facilities in a given area, in an effort to minimize waste and overlapping services.

b. Area-wide planning agencies are expensive, and they work in an area which is efficiently covered in Iowa at the present time by the Hospital Division of the State Department of Health.

Provoking student interest in medicine as a career is a continuing project of the Committee. Early this fall, in cooperation with the Iowa Interprofessional Association, a letter was mailed to over 600 school superintendents in the state announcing the availability of informational literature on careers in medicine, dentistry, pharmacy, veterinary medicine, nursing and hospital administration. As a result, several hundred pamphlets titled "A Career in Medicine" have been forwarded to interested students and schools. As a member of the IIA, the Society again cooperated with that organization in displaying an exhibit on Health Careers at the Iowa State Fair last August.

In an effort to maintain and enhance relationships between the Society and the SUI College of Medicine, the Committee plans to meet in the near future with the dean of the S.U.I. College of Medicine to discuss programs of continuing medical education and other matters of mutual interest and concern.

R. N. LARIMER, M.D., *Chairman*

COMMITTEE ON PUBLIC RELATIONS

A major project of the Public Relations Committee during the coming year will be the production of a film for showing over all television stations in Iowa. The Committee was recently informed that Lederle Laboratories, in cooperation with the AMA, has produced a 15-minute film segment titled "Medical Inventory," which provides information on a general survey of the national health picture by prominent physicians and health officials. The Society will develop an additional 15-minute segment analyzing health facilities and medical progress in Iowa, and the resultant 30-minute film program will be offered to television stations in Iowa for showing on public service time.

As a result of a recommendation by the Public Relations Committee for a statewide program on medical quackery, the Iowa Interprofessional Association has elected to sponsor a "Conference on Medical Quackery" on May 27, 1964. As a member of the IIA Executive Council, the chairman of your Committee will serve as program chairman for this important conference.

The Public Relations Committee has continued to work closely with the Legislative Committee in "Operation Hometown" activities and other projects designed to inform the public and the profession on medicine's opposition to the financing of health care for the aged through the Social Security System. During the recent public hearings by the House Ways and Means Committee on the King-Anderson Bill, copies of IMS testimony submitted to the Committee were provided to all daily and weekly newspapers throughout the state, as well as to other news outlets, along with an appropriate press release.

A series of 26 interviews on IMS public service projects and general health topics were completed over Station WMT-TV, Cedar Rapids, in September. The interviews were presented in conjunction with a film series titled "Medicine in the 60's," sponsored by the Iowa Electric Light and Power Company. This same series, on which Society representatives are also appearing, is currently being sponsored by IELP over WOI-TV, Ames, and to date, 18 interviews have been telecast.

On recommendation of the Public Relations Committee, the Committee on Health Education is continuing to cooperate with Radio Station WOI, Ames, in the production of a weekly 30-minute live broadcast titled "Doctor's House Call."

The Sixth Hawkeye Science Fair, sponsored by the IMS, Drake University, and the DES MOINES REGISTER AND TRIBUNE, will be held at the Veterans Auditorium in Des Moines, April 10-11, 1964. This event gains increased participation and prestige each year. At the 1963 HSF, 450 scientific exhibits were displayed by Iowa junior and senior high school students representing 96 schools. Over $3,000 in scholarships and other prizes, contributed by numerous business and professional organizations, were awarded to winning exhibitors. In addition to sponsoring the HSF, the Society also contributed awards for presentation to top exhibitors at the Eastern Iowa Science Fair (Cedar Rapids) and the Northeast Iowa Science Fair (Cedar Falls).

The Committee is aware that many physicians throughout the state are taking an active part in community affairs, and has encouraged physician participation in chambers of commerce, on school boards, and in other community activities which enhance the "public image" of physicians.

Reprints of the "In the Public Interest" section of the IMS JOURNAL continue to be distributed each month to all communications media, as well as to all Iowa legislators.

The Public Relations Committee will arrange the program for the Annual Senior Medical Student Conference, which will be held in Iowa City on May 2, 1964, for senior medical students and their wives. A

large majority of the senior class attends this one-day program, at which time Society representatives discuss legislative and public relations activities, health insurance, procedures in establishing a practice, and other subjects of interest to new doctors of medicine.

A review of Iowa newspaper clippings indicates that the position of the IMS on various health matters has generally received favorable attention and support, and the Society maintains constant liaison with all communications media to provide information on vari- our Society activities and policies. Wide coverage (newspaper, radio and television) was received throughout the state on last year's Annual Meeting.

Representatives of the Public Relations Committee attended the AMA Institute in Chicago, August 21-23, 1963, at which time attention was focused on public relations in the medical profession.

The Committee is cognizant of the many excellent public service projects carried out by county medical societies at the local level, and will gladly cooperate with any county society in the development and implementation of such projects.

JOHN G. THOMSEN, M.D., *Chairman*

COMMITTEE ON INTERPROFESSIONAL ACTIVITIES

The Committee on Interprofessional Activities met with a similar committee of the Iowa Pharmaceutical Association on August 29, 1963. Those present were advised of the formation of a national Joint Commission on Medicine and Pharmacy, which includes four representatives each from the American Medical Association, the American Pharmaceutical Association, and the National Association of Retail Druggists. The purpose of the Commission is to explore the interprofessional relationship of the professions of medicine and pharmacy. Two meetings have been held to date, and it is contemplated that a Physician-Pharmacist Code of Understanding will be developed which can be utilized throughout the country by both professions.

At the joint meeting, the following statements regarding physician-owned pharmacies were recommended for inclusion in the Iowa Physician-Pharmacist Code of Understanding:

> "According to the AMA's Code of Ethics, it is not unethical for a physician to own or operate a pharmacy, provided there is no exploitation of the patient. However, on June 26, 1958, the AMA Judicial Council issued an opinion stating that this language does not authorize a physician to dispense solely for his convenience, or for the purpose of supplementing his income.
>
> "In recognition of this interpretation by the AMA Judicial Council, the IMS believes that ownership of a pharmacy by a physician, or a group of physicians, shall be considered unethical, if adequate pharmaceutical service is readily available."

On November 21, 1963, the above statements were referred to the IMS Judicial Council for consideration, and the Council took the following actions:

1. The opinion of the AMA Judicial Council cited in the second sentence of the Interprofessional Activities Committee's first paragraph was not an interpretation or elaboration of the statement referred to in the first sentence, since it is clear that the opinion concerned dispensing rather than pharmacy-ownership. Therefore, the first paragraph does not justify the second one.
2. The secretary of the IMS Judicial Council shall ask the AMA whether its Judicial Council has yet elaborated upon the principle, "It is not in itself unethical for physicians to own pharmacies, provided there is no exploitation of the patient."
3. Pending an answer from the AMA, the recommendation from the IMS Interprofessional Activities Committee is tabled.

The Interprofessional Activities Committee has continued to cooperate with the Iowa Interprofessional Association in helping to carry out its various programs. The members of the IIA are: Iowa Medical Society, Iowa Dental Association, Iowa Pharmaceutical Association, Iowa Nurses Association, Iowa Veterinary Medical Association, and Iowa Hospital Association.

Promoting interest in health careers has been a major project of the IIA. Informational materials on careers in medicine, dentistry, hospital administration, veterinary medicine, nursing and pharmacy have been distributed to all Iowa schools, and are available in quantity on request; an exhibit on health careers was displayed at the 1963 Iowa State Fair; and a $150 scholarship prize was presented a qualified student who registered at the Fair and who indicated an interest in a health career.

A major project of the IIA for 1964 will be the sponsorship of a statewide Conference on Medical Quackery, which will be held at the Fort Des Moines Hotel in Des Moines on May 27, 1964. Speakers from the AMA, Food and Drug Administration, and other interested agencies will discuss all aspects of medical quackery, and representatives of professional and business associations, service and civic organizations, state government, schools, law enforcement agencies, communications media, etc., will be invited to attend this important meeting.

The IIA is also maintaining its interest and activity in civil defense and disaster planning, the formation of county interprofessional associations, and the development of appropriate health legislation.

F. M. BURGESON, M.D., *Chairman*

COMMITTEE ON HEALTH EDUCATION

To date, 47 health education programs have been presented over Radio Station WOI, Ames, on the "Doctor's House Call" series. Each week, a guest physician appears on this 30-minute live broadcast to discuss a predetermined and prepublicized medical topic, as well as to answer questions mailed to the station in advance of the program, and inquiries telephoned to the station during the broadcast period. According to comments received from the listening audience, as well as an evaluation by the program moderator, the series has proved to be of great interest and value. The Society will continue to cooperate in the production of these programs as long as the opportunity is available. The Committee expresses its appreciation to the many physicians throughout the state who have devoted the necessary time and talent to assure the success of this project.

Ten copies of an AMA statement on "Diet, Cholesterol and Heart Disease" were mailed to each member of the IMS for reception-room use. In addition, hundreds

of copies of the "Personal Health Information" card, "Tetanus Immunization" leaflets, and "What's the Answer?" booklets were provided, on request, to both physicians and representatives of various service and civic organizations for distribution purposes.

The 15th Health Education Workshop was held at the Iowa State University in Ames, July 15-16, 1963, and the IMS again served as a sponsoring organization, along with the State Department of Health, and allied health groups and civic organizations. Representatives of the Society and the Woman's Auxiliary attended the workshop sessions, which are conducted for health chairmen and personnel from various lay and professional health organizations in the state. The theme of the 1963 program was "Health Problems of the School-Age Child."

The Committee also cooperated with the State Department of Health in securing speakers and consultants for three School Health Education Workshops which were held at State College of Iowa, Cedar Falls, June 17-28; at the State University of Iowa, Iowa City, July 8-19; and at Drake University, Des Moines, July 22-August 2. These workshops are attended by school teachers for college credit. The Society contributed scholarships to cover tuition and expenses for two teachers who were workshop participants. Plans for the 1964 sessions are now being formulated, and the Committee will again assist in securing speakers for it.

On numerous occasions, the Speakers' Bureau has obtained guest speakers to address both professional and lay audiences on medical subjects, including a talk on "Preventive Health Practices" at the annual 4-H Summer Camp in Boone, Iowa.

General health topics are currently being discussed by Society representatives in brief interviews which are presented over WOI-TV, Ames, in conjunction with "Medicine in the Sixties," a film series, sponsored by the Iowa Electric Light and Power Company. A similar series, on which Society representatives also appeared to discuss health subjects, was completed last fall over WMT-TV, in Cedar Rapids.

The Committee hopes that county medical societies will initiate necessary contacts and cooperate with local radio and television stations in the production of medical programs. It also encourages county societies to work with communications media in sponsoring local "Public Health Forums."

The Committee continues to furnish articles on health subjects to WALLACE'S FARMER, for publication in its "Iowa M.D.'s Say" column.

The Iowa Interagency Cooperative Committee was recently reorganized as the Associated Health Organizations of Iowa. The Society is a member of this group, which consists of both governmental and voluntary health agencies, and it is represented at all meetings. The purpose of AHOI is to encourage and effect the interchange of ideas and information among member organizations; to act as an effective resource group for determining health needs of Iowa; and to develop working relationships with various Iowa governmental departments and officials.

The Health Education Committee will be happy to cooperate with county medical societies and allied health agencies in developing and sponsoring health education projects, and will continue its programs designed to educate the public on matters of health.

C. D. ELLYSON, M.D., *Chairman*

Reports of Special Committees

COMMITTEE ON INDUSTRIAL HEALTH

The Committee on Industrial Health has not held a meeting during the past year, since no matters have been presented that would necessitate a meeting of the Committee.

As recommended by the House of Delegates in 1963, the Committee continues to encourage voluntary procedures which would facilitate the free choice of physician under Workmen's Compensation.

A report of particular interest to members of the Committee was distributed for their information and study. This report, prepared by the chairman, concerned a meeting of state industrial health committee chairmen with the AMA Council on Occupational Health which was held on September 24 in San Francisco.

C. H. JOHNSTON, M.D., *Chairman*

OSTEOPATHIC AND MD/DO LIAISON COMMITTEES

Because of the close working relationship between these two Committees, a joint report is being submitted. Both Committees have been extremely active during the past year. The MD/DO Liaison Committee has held five formal meetings, and the full Osteopathic Committee has held three formal meetings. In addition, both Committees have future meetings scheduled, and a more-up-to-date report will be presented to the House of Delegates in April.

The jointly-approved evaluation and enrollment program has continued to operate with a minimum of problems. The following is a status report on the program as of March 1, 1964:

Approved by the IMS Judicial Council—105
Approved by the County Medical Society but not considered by the Judicial Council—6
Disapproved by the IMS Judicial Council—13
Disapproved by County Medical Society but not considered by the Judicial Council—4
No action yet taken on the application—32

Since the IMS Judicial Council is scheduled to meet after publication of this report, the Committee will not submit a complete listing of those osteopathic physicians and surgeons who have been placed on the list of individuals with whom it will not be considered unethical for doctors of medicine to associate professionally, but will present such a list as a part of its supplemental report to the House of Delegates.

The Committee understands that the new Composite Board of Medical Examiners, consisting of six M.D.'s, and two D.O.'s, is functioning very satisfactorily and that no insoluble problems have arisen. This Committee will continue to foster a close relationship with the Board of Medical Examiners.

During the past year, the American Medical Association appointed a Committee on Osteopathy composed of four physicians. The representation on the Committee is as follows: one physician representing the AMA's Council on Scientific Assembly; a physician representing the AMA Judicial Council; and a physician who represents the AMA's Council on Medical Education and Hospitals. The fourth member of the Committee was formerly an osteopathic physician in

California who has now been granted the M.D. degree by the new medical school in California which was formerly the Los Angeles College of Osteopathic Medicine and Surgery. This Committee on the national level will serve for state medical society committees as an advisory board, functioning in the area of relationships between osteopaths and M.D.'s when its assistance is requested. The Iowa Medical Society Committee has established liaison with the AMA Committee, and plans to meet with it as the joint program in Iowa develops.

Following the 1963 meeting of the IMS House of Delegates, the State Society received a communication from the dean of the State University of Iowa College of Medicine requesting a list of names and addresses of those osteopathic physicians and surgeons who had been placed on the approved list. It was contemplated that the State University of Iowa College of Medicine would invite the approved osteopathic physicians and surgeons to postgraduate courses conducted at the College of Medicine. This matter was considered in detail by the Osteopathic Committee, and an appropriate recommendation was forwarded to the Judicial Council for action. The recommendation of the Osteopathic Committee was as follows: "In the interest of better medical care for the people of Iowa, the IMS Osteopathic Committee recommends to the Judicial Council that the State University of Iowa College of Medicine invite those osteopathic physicians and surgeons, recognized as men with whom it will not be considered unethical for doctors of medicine to associate professionally, to attend SUI College of Medicine postgraduate courses. In addition, the Osteopathic Committee recommends that no certificate of attendance be issued and that those osteopathic physicians and surgeons attending postgraduate courses be cautioned about the use of the name of the State University of Iowa in the promotion of their individual practices. Also, the Osteopathic Committee recommends that the College of Medicine consult any co-sponsoring organization regarding participation of osteopathic physicians and surgeons in the postgraduate course prior to mailing invitations." The final action of the Judicial Council regarding this recommendation can be found in its report to the House of Delegates.

The Osteopathic Committee was also asked to consider the propriety of an M.D.'s appearing on the program of a meeting to be attended by osteopathic physicians and surgeons on the approved list as well as those who had not yet been approved. The Committee reported to the Judicial Council that the IMS/ISOPS evaluation program is intended to determine those osteopathic physicians and surgeons with whom it will not be unethical for doctors of medicine to associate professionally, and that osteopathic physicians who are not on the approved list are still considered cultists by the AMA and, in turn, by the IMS. Therefore, voluntary professional relationships with these latter individuals would appear to be unethical. Final action on this recommendation can also be found in the report of the Judicial Council.

Indicative of the public interest created in the program of voluntary ethical relationships between M.D.'s and D.O.'s is the extent of press coverage that has been devoted to this subject. During November, 1963, the DES MOINES TRIBUNE devoted a series of five articles to the status of relationships between the two professions in Iowa. The Committee considers it quite unusual for a daily newspaper to devote so much space to this subject. The overall reaction of the public and of the two professions to these articles has been satisfactory.

In the past few months, the MD/DO Liaison Committee has conducted the first formal hearings for osteopathic physicians and surgeons who have been disapproved by a county medical society and, in turn, by the Judicial Council of the Iowa Medical Society. It is the feeling of the MD/DO Liaison Committee that these hearings have proved beneficial to the osteopathic physician and surgeon involved, as well as to the county medical society, by facilitating an understanding of the operation and purposes of the evaluation and enrollment program. Additional hearings are scheduled.

The Committee is well aware that the evaluation program is completely a voluntary one, and that county medical societies have an option to participate or not to participate as they deem advisable. The Committee and individual members stand ready to assist any county medical society that may be experiencing difficulty in carrying out the evaluation program on a local level.

The Committee wishes to express its appreciation to all the county medical societies that have participated in the program and compliments them on their professional approach to this sometimes delicate subject.

As indicated, an up-to-date report on the status of the IMS/ISOPS evaluation and enrollment program will be presented at the time of the April meeting of the House of Delegates.

J. M. RHODES, M.D., *Chairman*

RURAL HEALTH COMMITTEE

The Rural Health Committee has held no meetings since the 1963 annual meeting of the IMS, but has continued its cooperation with the Extension Division at Iowa State University by arranging to have a physician speak at its 4-H Health Camp, and has continued providing materials with which to encourage each family to place itself under the care of a doctor and, in particular, to keep up the immunizations of each family member.

A leaflet concerning tetanus and the billfold-size Personal Health Record card are still available in reasonable quantities at IMS headquarters, and county medical societies are asked to urge their members to send for supplies of them.

The chairman represented the Committee at the National Rural Health Conference in Hot Springs, Arkansas, on September 20-21, 1963, and Dr. R. E. Griffin was its representative at the one held in Columbus, Ohio, March 6-7, 1964.

J. W. GAUGER, M.D., *Chairman*

PRECEPTORSHIP COMMITTEE

The Preceptorship Committee of the Iowa Medical Society met in Iowa City, on February 4, 1964, with R. C. Hardin, M.D., W. M. Fowler, M.D., and Mr. John Edison (president of the S.U.I. chapter of SAMA).

In opening the meeting, Dr. Caraway, chairman of the Committee, said it is now generally recognized that the Iowa preceptorship program hasn't achieved its original objective of persuading increased numbers of medical school students to choose general practice. In consequence, he declared, the Committee and the faculty of the S.U.I. College of Medicine should consider whether the program has, instead, accomplished something equally desirable, or whether it should be modified or terminated.

Each of the private practitioners, in turn, reported that he was sure his own preceptees had gained a great deal from their work with him, and that he, himself, had enjoyed working with the students. They were unanimous in preferring to have the program continue virtually unchanged.

The doctors from the University and the senior medical student said that in a few extraordinary situations they though the faculty should waive the preceptorship as a requirement for graduation. A man who plans, immediately after completing his training, to become a medical missionary was cited as a case in point. But they stressed that such exemptions should be infrequent, and each should be granted only after careful consideration and by a specific act of the faculty.

They said that they have become convinced of the value of the preceptorship, though until recently they were lukewarm toward it. One reason for their change of mind has been the enthusiasm shown by a great majority of the students, some of whom had protested vociferously before serving as preceptees. A more important reason, however, is that the preceptorship provides medical students a brief introduction to the problems that confront the family doctor and the technics that he uses in dealing with them.

The doctors from the University said, and the private practioners agreed, that a family physician is called upon to be a part-time psychiatrist, to function occasionally as a social worker, and/or financial advisor, and to keep abreast of all recent developments in surgery, urology, cardiology, dermatology and the rest of the specialties and sub-specialties, whether he himself intends attempting such procedures or not. The general practitioner is and will continue to be "the family doctor," they declared, and neither the pediatrician nor the internist will ever replace him in that role because the GP sees all family members at one time or another, because he is called upon either to diagnose and treat, or to diagnose and refer most ailments, and because unlike the specialist, his interest is in medicine as a whole rather than just in a division of it.

The practical technics that the general practitioner develops for himself and which he uses in his role as family counselor aren't ones that it seems either he or anyone else could teach in a medical-school environment. The comment was made that the essence of general practice, for this very reason, can't be conveyed to a GP resident in a metropolitan hospital setting. But a GP can demonstrate his self-taught skills to a student who is observing him in his office and accompanying him on his house calls and community-hospital rounds. This kind of practical instruction, the University faculty members see as the principal value of the preceptorship.

The Committee members who are private-practice GP's spoke of some other virtues that they see in the preceptorship. During his month in a GP's company, the student has a chance to see the facilities with which a country doctor works, to appreciate the number of hours per week he spends at his job, and to become more tolerant of his occasional omissions or mistakes. Such an exposure, they maintained, is something that even the men who are destined for full-time research or teaching should have.

It was again suggested that professors on the staff of the S.U.I. College of Medicine would benefit similarly from an annual two-day visit, each, to the office of a general practitioner. The University men pointed out that the members of the resident staff, for the most part, are graduates of medical schools in Iowa, Kansas or Wisconsin, and thus are themselves ex-preceptees. Since residents do a great deal of the teaching at Iowa City, they said that some of the benefits of teacher visits to GP's have already been achieved. The subject wasn't pursued further.

The Committee took note of the fact that the Iowa preceptorship program is now 10 years old. Funds, it was reported, will be secured immediately by the College for a questionnaire survey of ex-preceptees—including all of the physicians who have taken their M.D. degrees at S.U.I. during the past 10 years. Dr. Radcliffe is to draft the questionnaire, and will circulate it to the other members of the Preceptorship Committee for their suggestions.

It was planned to send a double postcard to each of last year's preceptors, inviting reenrollment. There no longer is any serious difficulty in getting enough preceptors, but in many instances private practitioners aren't so prompt as they might be in telling Dr. Fowler of their willingness to take students.

It was proposed that, in addition to other points on which preceptors are asked to report at the conclusion of every preceptorship, the College should give each physician an opportunity to say what he thinks his student has most conspiculously lacked.

L. D. CARAWAY, M.D., *Chairman*

COMMITTEE ON BLOOD BANKING

The Committee on Blood Banking studied four particular problems this past year. These included (1) the lawsuit brought against the Commissioner of Insurance for the State of Iowa by the Blood Service Plan Insurance Company of Phoenix, Arizona; (2) preparation of an Outline of Blood Banking at the request of the Board of Trustees of the Iowa Medical Society; (3) the Federal Trade Commission charges and hearings against the Community Blood Bank in Kansas City; and (4) a bill sponsored by U. S. Senator Edward V. Long to exempt non-profit community blood banks from Federal Trade Commission jurisdiction. These studies will be reported in greater detail in a supplemental report.

JACK M. LAYTON, M.D., *Chairman*

CHIROPRACTIC COMMITTEE

The Committee on Chiropractic of the State Society had no problems referred to it during the past year.

BRUCE F. HOWAR, M.D., *Chairman*

DOCTORS' ASSISTANTS' ADVISORY COMMITTEE

This Committee has met on a number of occasions for the purpose of working out a stronger support program for the Iowa Association of Medical Assistants, particularly to aid in increasing attendance at its annual meeting, which will be held May 15-17, 1964, in Cedar Rapids. Attendance at this meeting is being contemplated by members of the Committee, and Medical Society representatives will take an active part in the program.

Considerable time has been spent in working together with officers of IAMA in connection with the

establishment of a medical assistants' vocational course somewhere in Iowa, under the sponsorship of the State Department of Public Instruction located at Des Moines. As a result, it is possible that, within the next year, such a vocational program will be established in one or more junior colleges by the Division of Vocational Education, using the outline of a program recommended by the national organization of this group. Cooperative efforts are being carried out with the idea that such school or schools shall be of the highest quality. This project will be explored further.

OTTO N. GLESNE, M.D., *Chairman*

COMMITTEE ON SCIENTIFIC EXHIBITS

Because of limited space for exhibits at the Fort Des Moines Hotel, the Scientific Exhibit Section at the 1963 Annual Meeting consisted of only 26 exhibits. While the quantity was less, the quality was excellent. It is regrettable, however, that more physicians did not avail themselves of the opportunity of viewing these fine presentations. The Committee is cognizant of the contribution made by the exhibitors, and extends to them its sincere gratitude for their participation.

The 1964 Scientific Exhibit Section is to be held in the same area, with exhibits again being limited to those truly scientific in nature. Applications for space received prior to the writing of this report indicate the display will have many exhibits of interest and value to physicians attending the Annual Meeting. The Committee strongly urges all physicians to visit the exhibits. It will be a rewarding experience for the viewer as well as the exhibitors. It is only by the interest shown that exhibitors are compensated in any way for the preparation and presentation of their exhibits.

JAMES T. MCMILLAN, M.D., *Chairman*

RELATIVE VALUE STUDY COMMITTEE

The Relative Value Study Committee, early in 1964, met to consider methods of updating the county ranges of fees that were provided to the State Board of Social Welfare for the Medical Assistance to the Aged program. As is well known, the county ranges were obtained from information gathered in the fee survey conducted by the Relative Value Study Committee in the spring of 1960. The Committee spent considerable time discussing all aspects of this matter, and a consensus was reached on the following two points:

1. The Relative Value Study Committee commends and supports the officers of the IMS in the successful negotiation of the principle of usual and customary physicians' fees for services rendered MAA recipients.
2. After detailed discussion, both pro and con, the Committee agreed that a statewide survey of physicians' usual and customary fees at this particular time would not be prudent. Now that county ranges of fees have been sent to every Iowa physician, the accuracy of replies to a statewide survey would be subject to adverse factors.

The Committee, in reporting to the Board of Trustees, outlined several reasons for not conducting a survey at the present time. It was reported to the Relative Value Study Committee that the Board of Trustees recommended that a subcommittee of the Executive Council be created to provide guidelines in updating county ranges of fees to be used in connection with all programs—not only MAA. Since this matter is no longer under consideration by the Relative Value Study Committee, no further comment will be given.

The Committee has received several comments—both favorable and unfavorable—with regard to the Iowa Relative Value Index (Green Book) which was mailed to each member of the Iowa Medical Society in September, 1962. The Committee welcomes comments from any member of the IMS regarding the Green Book, and can assure every physician that all such comments will be given careful and complete consideration.

FRED STERNAGEL, M.D., *Chairman*

COMMITTEE ON NATIONAL EMERGENCY MEDICAL SERVICE

The chairman of the National Emergency Medical Service Committee attended an AMA Regional Workshop on Disaster Medical Care in Denver, Colorado, August 9-10, in which representatives from 13 states participated. Basically, the program was devoted to reports from state representatives on the principal activities and accomplishments of their medical societies in the development of disaster medical care programs, and discussions regarding the roles and responsibilities of physicians and medical societies in disaster planning.

A tentative Check List for Hospital Disaster Planning, developed by the AMA in cooperation with the American Hospital Association and the Joint Commission on Accreditation of Hospitals, was reviewed by the Committee, and suggested revisions were forwarded to the AMA, at its request. As soon as a final Check List has been prepared, incorporating suggestions submitted by various state medical societies, it will be distributed to hospitals and chairmen of state disaster medical-care committees.

The Committee has continued to give its cooperation to the Iowa State Department of Health in the promulgation of the Medical Self-Help Program in Iowa. Since the initiation of this program, a total of 4,478 persons have graduated from the 254 classes that have been conducted throughout the state. The Committee was told by Mr. Ed Hresko, director of the Division of Health Mobilization for Iowa, that, subject to the approval of the Department of Public Instruction, a letter would be transmitted to all county school superintendents in the state, urging them to include the Medical Self-Help Training Course in their school curricula.

The Committee is maintaining liaison with Mr. Hresko, and cooperates in the dissemination of information to county civil defense and disaster committees which have been appointed to work with local civil defense directors. A physician serves as committee chairman in each county, and the membership also includes a dentist, a veterinarian, a pharmacist, a nurse and a hospital administrator.

At a fall meeting, the Committee had as its guests the following persons: Mr. Hresko; Dr. W. H. Reiff, a member of the AMA Committee on Disaster Medical Care, and Mr. Thomas Holman, secretary to the AMA

Committee; and Mr. Walter Saunders, liaison officer for the Iowa State Department of Civil Defense. Activities of all concerned were reviewed for informational purposes, and it was agreed that additional meetings will serve to improve coordination and communications between civil defense officials and disaster committees at the state and local levels.

Dr. Reiff reported that the IMS has kept pace with other states in civil defense and disaster planning, and has implemented most of the programs which have been suggested by the AMA.

Based on a recommendation made at this meeting, pertinent excerpts from the CIVIL DEFENSE NEWS DIGEST, a publication of the Office of Civil Defense, are being published in the JOURNAL OF THE IOWA MEDICAL SOCIETY, in order to enhance communications between the civil defense office and physicians throughout the state. This feature has been called to the special attention of physician members of county civil defense and disaster committees.

The IMS film "Disaster Planning" which depicts the principles of planning for disaster, is still being utilized throughout Iowa, and on several occasions during the past year it has been lent to other state medical societies. The film can be obtained from the IMS headquarters office.

Cooperating with all county medical societies, allied health professions and state agencies in promoting and developing adequate emergency medical care plans for the State of Iowa will continue to be a primary function of this Committee.

ROBERT C. LARIMER, M.D., *Chairman*

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

The Advisory Committee to the Woman's Auxiliary has seen continued activity this past year. Auxiliary members have accepted the National Theme, "Serve and Communicate" in supporting or completing projects undertaken with the county medical societies, or with the approval of those bodies.

We are happy that members-at-large, in the counties not yet organized, are also sharing in Auxiliary activities. They have been most helpful and cooperative in projects where their assistance has been asked for. The county medical society in each county lacking an Auxiliary is urged to help physicians' wives, as key persons in their communities, to become organized groups.

Interest and enthusiasm for community health projects and a willingness to assume responsibility for committee tasks are, in themselves, valuable public-relations objectives. The Auxiliary, moreover, has accomplished a great deal by itself, and through its many members on the boards of various organizations and institutions and on the councils of local and state clubs, it has extended its influence considerably.

The Auxiliary continued its untiring activity in the legislative field, taking its directives from the national level as well as from the Iowa Medical Society. The Auxiliary's Legislative Committee chairman attends all meetings of the IMS Committee on Legislation, so as to keep well informed on medicine's legislative program. Every effort has been made to keep the latest information flowing to Auxiliary members, so they may be well and correctly informed on the King-Anderson issue, as well as on the progress on the Kerr-Mills program in Iowa. The members, in turn, have then served as a liaison between medicine and the community, aiding greatly in providing information to key people in each county.

The Community Service Committee (formerly Public Relations Committee), continued making its annual award to an Iowa woman other than a physician's wife or a paid health worker who has contributed outstanding voluntary health work in her community. Each county Auxiliary is urged to participate by making an award at the local level, and to enter its honoree for consideration at the state level. The state award for outstanding community health service is presented at the Annual Meeting of the Auxiliary.

As a part of the Community Service program, the AAPS Essay Contest has again been sponsored by the State Medical Society and its Auxiliary as a continuing effort in support of free enterprise.

The Handicapped Craft Sales Committee cooperates with the Iowa Society for Crippled Children and Adults in the sale of articles made by handicapped workers throughout the state. The Auxiliaries in the larger cities sponsor the sales, arranging for the sales locations and necessary publicity, and providing Auxiliary members in the role of saleswomen. All proceeds from the sales go to the individuals who have made the articles, thus giving the Auxiliary a definite part in a rehabilitation program.

The Health Education Loan Fund Committee has a loan fund exceeding $15,000 for use in allied medical careers. It has made its loans available mainly to nursing students, but has made a few loans in the medical technology field. The students who have graduated are meeting their obligations in repayment, as called for in their contracts. The Auxiliary Benefit Dance held on Tuesday evening during the Annual Meeting is supported by the members of the Iowa Medical Society through ticket purchases, and contributes measurably to the fund, since the Standard Medical and Surgical Company assumes the full expense for the evening. In addition, each local Auxiliary supports the loans through a contribution of 50 cents per member annually, and the IMS Auxiliary and the constituent ones make occasional gifts to the fund as memorials to deceased members.

The Auxiliary's Health Careers Committee continues to sponsor Future Nurse Clubs and Health Careers Clubs in high schools throughout the state. Where these organizations have been established, there have been increased numbers of enrollees for technology and nursing courses. Thus, through its Health Careers Committee, the Auxiliary is important in the recruitment field.

The Iowa Auxiliary's AMA-ERF Committee showed the greatest percentage gain at the national level, last year, with an increase of 245.99 per cent. It also encourages memorial gifts to the Iowa Medical Foundation.

The Mental Health Committee is continuing to provide the pamphlet series "Milestones to Marriage" to schools, and youth, church or civic organizations, as well as to physicians and other counselors. This Committee also participates in the Suicide Prevention Program. It has been represented at state and national mental health meetings in the past year.

The International Health Activities and Safety Com-

mittees have been represented at state as well as national meetings in their respective areas.

THE WOMAN'S AUXILIARY NEWS continues as a means of disseminating health-education information, project plans, and up-to-the-minute reports of activities of the Auxiliary on county, state, and national levels. Requests from Auxiliary presidents and editors in other states, as well as from national officers and committee chairmen, to be added to its mailing list indicate that it continues as an outstanding publication.

As it has done in the past few years, the Auxiliary will participate this spring in the annual Senior Day at the SUI College of Medicine, with its president appearing on the program.

Many projects are suggested to the county Auxiliaries, and each of these local groups, with the approval of its county medical society, chooses the one that seems best to meet the needs of its particular community. Auxiliary members who belong to other clubs can take responsibility for coordinating varying health efforts in those organizations, and can thereby help create effective health-education programs. The Medical Society and its Auxiliary are jointly interested in all activities that make communities healthier, happier and safer places in which to live.

The IMS Woman's Auxiliary Advisory Committee continues to urge more county medical societies to help organize Auxiliaries in their areas.

OTIS D. WOLFE, M.D., *Chairman*

COMMITTEE ON NURSING EDUCATION AND SERVICE

A number of meetings have been held with representatives from the nursing group, and also liaison efforts have been made to evaluate what can be expected of nurses, in the hospital and in the office, particularly in relationship to their types of education and types of training.

In the area of legislation, support was given to the nurses in their effort to secure legislation requiring licensure rather than mere certification for entry into the practice of nursing—a worthwhile step.

A better understanding of the problems of the nurse on the part of doctors, and a better understanding of the attitude of the medical profession on the part of the nurses, have been the results of these meetings. Further clarification of permissible duties and better delineation of limits of procedures are being contemplated in the future. Due consideration has been given to the legal requirements as well as the interprofessional relationship.

OTTO N. GLESNE, M.D., *Chairman*

HISTORICAL COMMITTEE

The Historical Committee received two manuscripts during the past year, and expects eventually to publish them in the JOURNAL. However, everything possible is being done to hold down the size of each issue, for the time being, while the JOURNAL is financially embarrassed, and it has seemed that the publication of county medical histories might most justifiably be postponed.

DENNIS H. KELLY, SR., M.D., *Chairman*

COMMITTEE ON GROUP INSURANCE

The Committee on Group Insurance met following the 1963 annual meeting of the Iowa Medical Society. It reviewed the different group coverages provided for members of the Society desiring such protection, and also studied and acted on matters referred to the Committee by the House of Delegates. Comments will follow pertaining to the different types of group programs in being, and other matters.

STATE-WIDE BLUE CROSS-BLUE SHIELD PLAN

The 1963 House of Delegates referred to the Committee on Group Insurance a resolution from the Scott County Medical Society requesting that the state-wide physicians' Blue Cross-Blue Shield Program extend coverage to widows and orphans of doctors who previously were enrolled in the Society-approved program.

The Committee met shortly following the 1963 annual meeting and requested that Blue Cross-Blue Shield implement the following recommendations as a part of the state-wide physicians' Blue Cross-Blue Shield group:

1. Physicians may enroll in the State-Wide Physicians' group within 90 days after being admitted to IMS membership without underwriting; those applying at other times except during the regular reopening period, will be considered, subject to regular underwriting requirements.
2. The wife of a member of the state-wide groups shall have the privilege of continuing the coverage for herself and dependent children upon the death of her husband.
3. Physicians who are members of the IMS and enrolled in a local county medical society group may transfer into the state-wide physicians' group at a time other than at the reopening period, provided that at least 75 per cent of those then enrolled in the local group transfer to the state group.
4. Physicians' widows who are enrolled in any county medical society group may transfer into the state-wide group at the anniversary date of the group when it is reopened. (Physicians' widows who were enrolled in the Scott County Medical Society at the time this group transferred to the state-wide group will be given the opportunity to transfer, and benefits and payments will be made retroactive to January 1, 1963.)
5. Family contracts in the state-wide group provide coverage until age 23, if dependent is single and a college student. Blue Cross and Blue Shield will use the following definition in determining liability for these children:

"*Educational institution* means only an educational institution which normally maintains a regular faculty and curriculum, and normally has a regular organized body of students in attendance at the place where its educational activities are carried on."

It was determined that these regulations do not require action by the IMS Executive Council and/or House of Delegates, and they have now been implemented by Blue Cross-Blue Shield.

An open enrollment period for the State-Wide Physicians' Blue Cross-Blue Shield program was held during the latter part of 1963. As of this date, the State-Wide Physicians' group includes 837 contracts.

GROUP DISABILITY COVERAGE

The disability coverage carried by members has proved very satisfactory to both the carrier and the members of the Society who took this insurance. An open enrollment period was held from November 1, 1963 to March 1, 1964 to give members not already covered an opportunity to join.

GROUP LIFE INSURANCE COVERAGE

The experience with this program has been quite satisfactory, and no complaints have been received from the members enrolled. In the first part of 1964, the carrier, Bankers Life Company of Des Moines, Iowa, will submit new rates based on the 1958 C.S.O. Mortality Table and they will apply to new applicants. These rates will be somewhat less than those in the past, and corresponding changes will also be made in the dividend schedule on existing policies, to bring the net cost of the coverage into proper line.

It is anticipated that an open enrollment period will be held during the months of April and May, 1964. All members of IMS will be informed of details through the Prouty Insurance Company, administrators for the Group Disability and Group Life programs.

OTHER MATTERS

The Committee discussed at some length possible ways and means of informing members of the Society of the various group insurance programs available to them. It was decided that the chairman should prepare a series of articles for publication in the JOURNAL OF THE IMS, describing the various programs and giving some detailed information.

The articles, dealing with the State-Wide Blue Cross-Blue Shield plan and the Disability plan, have been published, and it is anticipated that an article dealing with the Group Life program will appear in the April issue. The response to the articles published has been very gratifying to the Committee, and it hopes the membership is now more fully aware of the benefits available to them through the IMS group insurance programs.

During the past year, the Committee on Group Insurance considered a comprehensive personal and professional catastrophic liability insurance program. The conclusion of the Committee was that this type of insurance is too all-inclusive and does not lend itself to the type of group coverage in which IMS members have been interested. Further, it is the opinion of the Committee that this type coverage should be on an individual, personal basis, rather than approved and sponsored by the Iowa Medical Society.

The Committee also heard a report regarding the recently enacted H.R. 10 (Keogh Bill). The Committee is not prepared to make any formal recommendation to the IMS regarding a group program under this legislation. It has several reasons for taking no immediate action on this matter, but basically it feels that the plan does not offer sufficient economic benefits to justify the Committee's recommending a group retirement program to the IMS.

During the past year, the American Medical Association has approved and has made available a retirement plan which implements the Self-employed Individuals' Retirement Act of 1962 for the benefit of AMA members and their employees. Information regarding the plan is available from the AMA upon request.

There continues to be some difficulty in enrolling new members of the IMS in the IMS approved groups programs. The Committee earlier recommended that an appropriate flier outlining the group insurance programs be sent to all new members so that they might be apprised of the coverage available. This project has not been consummated, but planning is underway.

We are notified by the Prouty Insurance Company, administrators for the Group Disability and Group Life programs, that experience has been satisfactory, and that the underwriters are satisfied with the programs.

W. O. PURDY, M.D., *Chairman*

IOWA BAR LIAISON COMMITTEE

No material has been sent to this Committee for consideration, and thus no meetings of the Iowa Bar Liaison Committee have been held in the past year.

J. M. TIERNEY, M.D., *Chairman*

MEDICARE CLAIMS COMMITTEE

During the past year it was not necessary for the Committee to meet for the purpose of adjudicating Medicare claims. The members of the Committee have served primarily as consultants to aid the IMS staff in properly coding and processing Medicare cases.

We feel the program continues to operate satisfactorily, and that few problems have been encountered. The Committee welcomes any questions that Iowa physicians may have regarding Medicare rules and regulations, or the method of computing payment for authorized services.

J. H. KELLEY, M.D., *Member*

COMMITTEE ON PARAMEDICAL SERVICES

As chairman of the Committee on Paramedical Services, I have nothing to report to date.

There has been no called meeting, and no questions regarding licensure have been posed by the physical therapists.

F. EBERLE THORNTON, M.D., *Chairman*

POLICY-EVALUATION COMMITTEE

A Policy-Evaluation Committee report has been published in the March issue of the JOURNAL OF THE IOWA MEDICAL SOCIETY.

W. L. DOWNING, M.D., *Chairman*

KING-ANDERSON PLANNING COMMITTEE

The King-Anderson Planning Committee is coordinating activities in connection with OPERATION HOMETOWN, a national legislative program developed by the AMA for county medical societies. It is a continuing program designed to offset the mounting pressure for King-Anderson legislation.

Last May, personal letters were mailed to the county King-Anderson chairmen appointed by county medical society presidents in 1961, requesting them to continue to serve. In counties where King-Anderson chairmen had not been previously appointed, letters were sent directly to county-society presidents. To date, 81 county medical societies have activated their county King-Anderson committees, and OPERATION HOMETOWN kits have been provided to all committee chair-

men. Each kit includes appropriate materials and suggestions for making speeches, contacting legislators, distributing available pamphlets and brochures, etc.

Communications have been transmitted on several occasions to all county chairmen, as well as to members of the Woman's Auxiliary, stressing the importance of maintaining a letter-writing campaign to Iowa senators and representatives in Congress, outlining the reasons the King-Anderson Bill should be opposed. Appropriate informational materials have also been provided.

The Committee has secured physician speakers to discuss King-Anderson legislation at numerous lay group meetings throughout the state, and the AMA film "YOUR HEALTH—YOUR CHOICE" which features Dr. Edward Annis, AMA president, has also been used extensively.

In March, Dr. Annis was a guest speaker at a Public Forum in Grinnell, Iowa, sponsored by Grinnell College, and the IMS invited business and professional leaders in Iowa to attend that meeting.

The national debate topic for 1963-64 concerned the question: "Should Social Security benefits be extended to include complete medical care?" Hundreds of informational booklets and other literature outlining medicine's position on King-Anderson type legislation were provided to high school and college debaters throughout the state.

The King-Anderson Planning Committee will continue to maintain close liaison with other IMS committees dealing with this legislative matter, all county King-Anderson chairmen, and the AMA.

C. W. SEIBERT, M.D., *Chairman*

COMMITTEE ON RADIATION CONTROL

There has been no meeting of the Radiation Control Committee during the past year. It last met to refine the Radiation Control Bill prior to the last General Assembly, in 1963. The Bill, although filed, was not acted upon. The Committee will become active when and if a Radiation Control Bill is enacted.

FRANK R. PETERSON, M.D., *Chairman*

COMMITTEE ON MEDICINE AND RELIGION

The first meeting of the newly formed IMS Committee on Medicine and Religion was held in November, 1963. Mr. Arne Larson, assistant director of the AMA Department of Medicine and Religion was present to review the purposes of the AMA Department, and to provide suggestions for establishing and maintaining physician-clergy relations at the state and local levels.

The basic objective of the Committee is to bring together physicians and clergymen of all faiths at the local and state levels, for the study and discussion of mutual problems and common concern for the total welfare of the patient.

Organizational efforts have been carried out in the hope that every county medical society will establish a committee on medicine and religion. To date, such committees have been appointed in 19 counties. A medicine and religion program guide, which includes suggestions for scheduling joint meetings of physicians and clergymen, discussion topics, etc., is being sent to all county committee chairmen.

The "In the Public Interest" section of the August, 1963 JOURNAL OF THE IMS was devoted to an article on "Working Relationships Between Physicians and Clergymen," and your Committee chairman discussed this subject on a brief interview which was telecast over WOI-TV in August.

The Committee plans to develop additional articles concerning medicine and religion for publication in the JOURNAL, and hopes that presentations on this subject will be considered for inclusion at future appropriate IMS meetings and conferences.

OTTO N. GLESNE, M.D., *Chairman*

COMMITTEE ON MEDICAL PRACTICE IN HOSPITALS AND NURSING HOMES

Although it has not been necessary for the Committee to hold a meeting during the past year, it continues through various mechanisms to gather information on the medical supervision of radiology and pathology departments in Iowa hospitals. No matters have been referred to the Committee, and thus no additional report is presented.

A. P. ECHTERNACHT, M.D., *Chairman*

SUBCOMMITTEE ON ADOPTIONS

Although the Subcommittee has not held a meeting during the past year, its members continue to watch legislative developments in the field of adoptions. The Subcommittee may very well be called upon as plans are being made for the next session of the Iowa General Assembly.

R. L. WICKS, M.D., *Chairman*

IMS PLAN AND SCOPE COMMITTEE

The Plan and Scope Committee met in joint session with the Board of Trustees of the IMS on August 27, 1963, to consider the desirability and feasibility of establishing and maintaining the usual, customary and reasonable fee concept for all third party medical care plans, governmental and private—e.g., MAA, Medicare and Blue Shield.

Although the Committee had in mind resolutions 1 and 10 considered by the House of Delegates in 1963 concerning the individual responsibility concept, it concluded that a more pressing problem involved development of a definite IMS statement of policy on the application of usual and customary fees. As a result of the joint meeting, and of a meeting of the Plan and Scope Committee that immediately followed, a statement was prepared by the committee for consideration by the Board of Trustees and Executive Council of the IMS.

The statement, approved by the Executive Council on November 21, is as follows:

I. In implementing the MAA program, and in considering physician participation in future programs, the usual, customary and reasonable charge of the physician should be maintained on the basis of ranges of fees within a county or group of counties, subject to adjudication by county and/or state review committees. In implementing these programs, recognition should be given to the fact that the usual, customary and reasonable fees of any physician may of necessity require revision from time to time, dependent upon the exigencies of his own practice. (It follows that periodical reviews of their fee ranges by the physicians of the respective counties will be necessary.)

II. A statewide review committee, composed of physicians from various geographic locations and specialty organizations, should work in close co-

operation with constituent county review committees in adjudicating questionable claims, and should assume responsibility for referring such claims to appropriate committees and/or councils of the county or Iowa Medical Society. In situations where there is not a functioning county or multi-county committee, the state review committee should assume its responsibility. Responsible and knowledgeable physicians should be invited to serve on these review committees.

III. County committees should assume responsibility for ascertaining whether or not physicians within a county are actually charging their usual, customary and reasonable fees. In this connection, it is recommended that under the MAA program the fiscal agent should be requested to submit a list of all physicians' charges for review by the state committee each month. The state committee would in turn refer appropriate and pertinent information to each respective county society review committee so that local surveillance of usual, customary and reasonable charges can be maintained. The county committees would be requested to report back to the state review committee, supplying that committee with such information as is necessary to confirm that reasonable, usual and customary charges are being made.

IV. Physicians who insist upon exceeding the range of usual, customary and reasonable charges of their respective counties by consistently submitting higher charges for services rendered should be invited or requested not to participate in the MAA program (or other programs). Surveillance over situations where physicians may be involved in any unethical procedures should be continually maintained by appropriate county and Iowa Medical Society committees and/or councils.

V. Adequate staff and facilities should be available in order properly to carry out the administrative duties in connection with the MAA program and other programs involving the usual, customary and ordinary charge concept, so as to insure their success.

Any further activities of this Committee prior to the Annual Meeting will be presented to the House of Delegates in a supplemental report.

G. H. SCANLON, M.D., *Chairman*

PUBLICATIONS COMMITTEE

THE JOURNAL OF THE IOWA MEDICAL SOCIETY has always had enough valuable scientific papers to publish in each of its issues, and of late they have been especially numerous. The editors, and indeed all of the private-practitioner members of the IMS, are deeply indebted to the faculty at the S.U.I. College of Medicine, and to the prominent physicians and teachers from other states who serve as guest speakers at Iowa meetings, for their generosity in making their manuscripts available to the Society. In providing their articles to the Iowa JOURNAL, they forego the considerably larger readerships of the nationally circulated medical publications.

As was pointed out in the February, 1964, installment of "In the Public Interest," the JOURNAL endeavors chiefly to publish review articles designed to save reading time for physicians in keeping abreast of current diagnosis and therapy, and up-to-the-minute reports on health problems of immediate importance in Iowa. In addition, it transmits information regarding socioeconomic matters, reports the deliberations and actions of IMS officers and committees, and prints personal news.

Because of declining advertising revenue, it has been necessary to reduce the contents of each recent issue to some extent, and such economies will continue for as long as the JOURNAL is financially embarrassed. The editors hope, however, that the officers and delegates share their belief that the publication should continue performing its rather specialized tasks substantially as it has been doing them, and that its appearance should continue to be a credit to the IMS and to the medical profession.

It deserves repeating that the JOURNAL staff has responsibility for others of the Society's publications besides the JOURNAL, and that it conducts the Physicians' Placement Bureau. In addition, individual staff members serve as liaison to various IMS councils and committees.

(This concludes the material that was published in the HANDBOOK FOR THE HOUSE OF DELEGATES.)

COMMENTS OF THE PRESIDENT ON MEDICAL ASSISTANCE TO THE AGED

C. V. Edwards, Sr., M.D.

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

The officers of the Iowa Medical Society have made every effort to keep all IMS members informed regarding the negotiations that preceded implementation of Medical Aid to the Aged in Iowa. Realizing, however, that many members of the House of Delegates may not have had an opportunity to become completely familiar with the successive steps that were taken, I have requested an opportunity to retrace them for you.

All of you know that the Iowa Medical Society played an important role, during the 1961 session of the Iowa General Assembly, in securing passage of a satisfactory MAA Enabling Act, to implement the Kerr-Mills Law that had been passed by the Congress of the United States in the fall of 1960. Again in 1963, because the Legislature had voted no money for the program two years earlier, the Society urged the appropriation of sufficient funds to get MAA started.

The appropriations act was signed by the Governor on May 9, 1963, to become effective on July 4, 1963. Immediately afterward, on May 16, 1963, the IMS Executive Council was called into session to consider the role that physicians should play in the MAA program. The Council requested the Subcommittee on Public Assistance to study the program and make recommendations to the Council on this matter. The Subcommittee reported to the Council on June 4, and the Council adopted the following statement regarding physicians' fees under MAA: "Physicians should charge their usual fees, with the understanding that the fees may be discounted at a percentage rate comparable to the reduction accepted by other vendors participating in the MAA program."

During June and July, the MAA Advisory Council and the Board of Social Welfare met on several occasions to discuss the various aspects of the program, including payment of vendors for services rendered to MAA recipients. The MAA Advisory Council and the

Society's representative on that Council took the firm position that all vendors should receive their usual and customary charges. The officers of the Iowa Medical Society made it very clear that they would not negotiate on any fixed-fee basis, and also that they would not accept an arrangement similar to the one used under OAA, in which a dollar-conversion factor based on a unit index is employed. Initially, the Board of Social Welfare was not at all receptive to this approach, and in a meeting between its representatives and those of the Iowa Medical Society, on July 15, 1963, the Board indicated that if it were to implement a usual and customary fee program, federal requirements would dictate that some fee guidelines must be provided to the Board for the administration and payment of claims under the program.

In view of this position of the Board of Social Welfare, the IMS Executive Council held a telephone conference, on July 25, 1963, primarily to determine whether or not the Society should make county ranges of physicians' fees available to the Board of Social Welfare, as a part of the MAA proposal. Such information had been gathered from Iowa physicians in the various counties at the time when the latest edition of the IOWA RELATIVE VALUE INDEX was compiled. (During the spring of 1960, each member of the Iowa Medical Society had been asked to complete a questionnaire regarding his usual charges. Approximately 70 per cent of the Iowa physicians had returned their questionnaires, and the figures taken from them had been broken down by county and coded on IBM equipment.) The Executive Council, on July 25, 1963, unanimously approved development by the IMS of guidelines for use in administering the Iowa MAA program, using ranges of physicians' charges, county by county, based on the results of the 1960 survey conducted by the Relative Value Study Committee.

The Board of Social Welfare had told the IMS that it would need to have this information no later than September 1, 1963. The four weeks between August 1 and September 4, 1963, were spent in recovering the information from the IBM cards, and in manually preparing the 99 county ranges of fees for submission to the Board.

It was then learned that early in August, in spite of its agreement to use usual and customary fees under MAA, the Board of Social Welfare had voted 2-0 to use the Old Age Assistance fee schedule for the MAA program. The fee schedule for OAA is a maximum of $3 per unit on the old IOWA UNIT FEE INDEX (Gray Book). Two days later, however, the Board of Social Welfare rescinded its previous action regarding the MAA fee schedule by a vote of 2-1.

During this time, there appeared in the DES MOINES REGISTER several editorials which supported the position of the Iowa Medical Society, and which, it is felt, had a direct effect on the Board of Social Welfare's subsequent approval of the usual and customary fee concept.

On September 4, 1963, the Society presented the completed ranges of fees for each Iowa county to the State Department of Social Welfare. The Board, at a meeting on September 6, approved using the information submitted by the Iowa Medical Society as the basis for paying usual and customary charges under the MAA program. At that point, the county ranges of fees, according to state and federal regulations, became the maximum charges for physicians' services under the MAA program in Iowa.

After the adoption of the usual and customary fee concept for MAA, the officers of the Society received several favorable comments on their successful conduct of the negotiations. In fact, two county medical societies presented resolutions to the State Society commending its officers for negotiating a usual and customary fee concept under the MAA program.

As was later learned, everything about the county ranges of fees wasn't, and still isn't, perfect. The Society made it very clear to the State Board of Social Welfare that the county ranges of fees represented charges reported in 1960, and that this information would need updating as soon as feasible. Later, two main problem areas were discovered:

1. *The basis of payment for anesthesia fees.* The 1960 questionnaires had requested information on charges for anesthesia on a time basis. That basis for computation is not customary for anesthesiologists in this state, but the question had been worded thus, and no opportunity had been given to the anesthesiologists, on a county basis, to report their charges by procedure. This caused serious dissatisfaction, and the Committee is aware that many practicing anesthesiologists have filed formal complaints with the IMS because of this method of listing fees in the MAA program. Committees of the Society and its officers are pledged to do everything possible to see that this matter is negotiated with the Board of Social Welfare at the earliest possible date.

2. *Payment for mileage.* This second problem also is one that arose because of the questionnaire that had been used in the 1960 survey. The questionnaire had requested information thus: "9908—Mileage, per mile, one way, beyond radius of ten miles from office or home." It is apparent that most Iowa physicians do not use this method of billing for mileage. Unfortunately, that discrepancy was not discovered in the rush of getting county ranges of fees to the State Board of Social Welfare within the time allotted. This is another area that the Medical Society will be negotiating with the State Board of Social Welfare.

On September 13, 1963, after the Society and other vendor groups had submitted their guidelines for payment for services rendered, the Board of Social Welfare formulated specifications and invited bids on them from firms interested in becoming the fiscal agent to administer the program. On October 15, the State Board of Social Welfare accepted the bid of Iowa Hospital Service, Inc. to serve as the MAA fiscal agent, and further approved the MAA program to become effective on December 1, 1963. Through the fiscal agent, during the period from October 15 through December 1, 1963, the State Board of Social Welfare published the 99 county ranges of fees, and made that information available to all physicians who had indicated a willingness to participate in the MAA program. It took that step even though the Medical Society had counseled against making those county ranges generally available. Rather, the Society had recommended that physicians bill their usual and customary charges, and that the county ranges of fees provided by the Society be used only as administrative guidelines.

Now that the MAA program has been in operation for several months, it has become apparent that the county ranges of fees for a few counties are, in fact, lower than the presently existing usual and customary charges of physicians in those localities. Needless to say, this disparity has caused dissatisfaction. The officers of the Society are firm in their belief that the

concept of usual and customary fees under MAA is one that will have far-reaching effects on the practice of medicine in Iowa. You may rest assured that if the Society had not actively and resolutely entered into negotiations with the Board of Social Welfare on a usual and customary fee basis, physicians and all other vendors would now be compensated under MAA on the same unsatisfactory basis as that which is used for payments under the Old Age Assistance Program. The Society's wish to fulfill the mandate for usual and customary fees was the main reason we spent so much time and energy in the negotiations.

There are going to be problems in any program such as MAA, but only through the Iowa Medical Society do the physicians of this state have an opportunity to negotiate collectively on these matters and to arrive at a satisfactory agreement. We urge each physician to make every effort to cooperate in the MAA program, even if it does not seem to be working as smoothly as could be desired. Also, we ask you to provide the Medical Society office with comments and suggestions regarding areas that should be reexamined. Naturally, these negotiations are a two-sided affair. In the opinion of the present officers, the relations between the Board of Social Welfare and the Iowa Medical Society are the best that have existed for several years, and they hope to maintain that atmosphere.

The Kerr-Mills Law, when fully implemented, may very well solve all the problems for senior citizens, whether those problems be real or merely political. Amendments to the law have been suggested. We must see that modifications and changes do not alter the basic principle of customary and usual fees.

We should keep in mind that the House Ways & Means Committee is now in executive session considering the King-Anderson Bill and alternatives. It is quite possible that amendments to the Kerr-Mills Law may be recommended by this Committee. Therefore, it behooves all of us to do everything possible to demonstrate that the Kerr-Mills Law, as implemented in Iowa, will meet the health needs of eligible recipients. On you, its success depends.

I have asked Dr. Elmer Smith, medical consultant to the Board of Social Welfare, to make some brief comments on the status of the MAA Program in Iowa, and on the attitude of the Board of Social Welfare toward the program.

MAA IN IOWA

E. M. Smith, M.D.

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

INTRODUCTION

"For you have the poor always with you," is a quotation from St. Matthew. We see that in ancient times the problem of caring for these people was with us. The reason most of these people are on the public assistance rolls is usually connected with some type of human frailty. These include illness, alcoholism, lack of education and mismanagement of funds. There are a number of ways to handle this segment of our populace. We might for instance do nothing or have a dole system or practice socialism in its extreme form or try to correct their deficiencies so that they can reassume their position in the employable force. This is what public assistance programs attempt to do.

HISTORY OF LEGISLATION

The Kerr-Mills or Medical Assistance to the Aged Program gets its legislative legality from our national congress. This body passed a law in 1960 making this program available. Kerr-Mills, as do the rest of the public assistance programs, is an amendment to the Social Security Act. This Act was legislated during the 1930's. Kerr-Mills is a Title I amendment to the Social Security Act as is the old age assistance program. The Iowa Kerr-Mills law was passed in 1961. Money for its implementation was authorized in 1963.

EVOLVEMENT OF THE KERR-MILLS PLAN IN IOWA

The final plan in Iowa came about in the following manner. Responsibility for the program rests with the Board of Social Welfare. However, the legislature directed that the plan be formulated by the Board of Social Welfare with the advice of an MAA Advisory Council, this Council to be composed of representatives of each vendor group plus a state senator and state representative and a lay member. Negotiations between the Board of Social Welfare and the Advisory Council began in July and the finalized program went into effect December 1, 1963.

It is my understanding that the Board of Social Welfare at the inception of the program thought that payment for services would be the same as for the Medical and Remedial Care Plan, a portion of which is the Old Age Assistance Program. Through negotiations, the Board eventually accepted the usual and customary fee concept of payment for services. Some vendor groups did not insist on this provision but a number, including physicians, did desire this approach. It was then found that the federal government (which participates in the program 58 per cent) would not be interested in a purely open-end contract. In other words, a maximum for services must be acknowledged. This of course called for further negotiations. The Iowa Medical Society, in order to preserve the usual and customary fee concept, presented to the Board of Social Welfare a survey of Iowa physicians' fees by county. At this time heavy pressure was being brought on the Board of Social Welfare to get the program underway. This pressure was exerted by the Department of Health, Education and Welfare, various political parties, private welfare organizations, unions, church groups and many others. The arguments of the above centered around the fact that worthy eligible people were being deprived of essential medical care. Because of this urgency to get the plan underway the Iowa Medical Society did not have time to accomplish an up-to-date survey of medical fees throughout the state. In lieu of this, a survey accomplished in 1960 was utilized. Between 65 and 70 per cent of the physicians of the state participated in this 1960 survey.

An unfortunate technical problem has developed from the questionnaire used in this survey. The Iowa Medical Society, to conserve on money, did not prepare a new questionnaire form for the 1960 survey but used one in existence which had been prepared by the AMA. This AMA form has only 250 procedures listed. It also has anesthesiologists' fees listed on a time rather than procedure basis. A further complication of the AMA form is that no mileage can be charged until after 10 miles one way has been passed. This survey accomplished in 1960 was then approved by the Board of Social Welfare with the above objectionable provisions in it. Through error at some level, the objec-

tionable features were not detected. Consequently an official approval of the plan had been made. This is not easy to change. The Board of Social Welfare of necessity must be concerned with budgetary matters. Such a thing as changing the green fee range booklet by county and the instruction sheets plus the postage involved would amount to approximately $17,500.00 This type of extra expenditure is not feasible when at approximately the same time grants due ADC were being reduced and publicized. The plan as it now stands has been approved by the Regional Office in Kansas City and HEW headquarters in Washington. This means they will participate in the plan monetarily. Any changes in the plan must be approved by them. It is conceivable that the whole plan could be rejected on the basis of a change. Some aspects of the plan are already viewed with enthusiasm bordering on coma. Perhaps it would be best not to attempt change at this time.

ELIGIBILITY

The provisions for eligibility are established by law. According to the statute, a person is eligible for MAA if he or she is over age 65, is a resident of Iowa, is not a patient in a mental or TB institution, is not an inmate of a public institution except as a patient in a licensed hospital, is medically eligible, has incurred medical expense in the amount of $50 in the previous 12 months, does not have an annual income in excess of $1,500 which is $125 per month if unmarried or $2,200 if married and living with spouse, does not have resources in excess of $2,000 if single or $3,000 if married. Excluded from consideration are homestead, household goods, automobile, tools of trade and cash value of insurance.

ELIGIBILITY EXPLAINED

A person must have attained his 65th birthday. Proof of this may be obtained from birth records, social security records, family records, insurance forms, etc.

The recipient must have legal residence in the state of Iowa. However, if temporarily residing in another state, he may receive benefits.

The applicant may not be residing in a TB or mental institution as there are already provisions for these people under existing laws and tax-supported institutions.

The applicant may not be an inmate of a public institution for exactly the same reason as above.

The people eligible must have a medical reason in their application supported by a licensed vendor's statement.

Fifty dollars obligated during the previous 12 months may include any type of service concerning health. Supplies for health needs may be included. An ill person may participate after $50 has been expended during the current illness. This of course, is if he is otherwise eligible.

If income in excess of the $1,500 per year or $125 per month is obligated for medical care during a month, the patient may pay in his excess income for care. The program will then pick up the balance.

SCOPE OF SERVICES

The MAA program in Iowa has comprehensive medical services for the eligible recipient. Almost total medical care is provided. This includes supplies, hospital care, drugs, physicians' services, osteopathic services, optometrist examination, podiatrists' care, private duty nursing and organized nursing services. In addition, care in nursing homes is provided for 180 days or six months of the year. This last must be preceded by hospitalization. The Kerr-Mills program does not provide any housing, food allowance, clothing supply or monetary reimbursement. One limitation on medical services is that psychiatric care is limited to one call for diagnostic purposes only, the reason being that psychiatric care is now provided in tax-supported institutions. Any existing health resource must be utilized before MAA pays for services. This means accident and health insurance.

The Iowa law provides against transfer from OAA to MAA. The recipient, if eligible, has a choice of the programs available. Under the OAA program he receives other services besides medical, including a personal allowance of $12 to $18 per month.

At the present time there are no limits on calls, x-rays, treatment, etc., if they fall under the customary treatment for a disease in a given community. Drugs are limited to a 30-day supply at the present time with no refills, the reason for this being monetary considerations.

CRITICISMS

The MAA program is subject to criticism in certain areas. Some of this maligning comes from high political sources. Most of the criticisms voiced center around areas which do not pertain to Iowa, although some do. These criticisms are:

1. The means test to determine eligibility is considered a detriment by certain people.
2. A few wealthy states obtain the bulk of the money. It is true that California, Michigan, New York and Texas did at one time receive 88 per cent of the federal funds. This was before Iowa and a number of other states had an active program.
3. Transfer of OAA to MAA by many states. This is prohibited by law in Iowa. Some states have done this since they receive more federal funds for MAA than OAA.
4. All states have not implemented the program. There are at present 36 jurisdictions in operation. Twelve are in the process of developing. Besides states, these include territories such as Puerto Rico and the Virgin Islands. Three states have augmented their OAA programs so that they compare to MAA.
5. Limited services provided in some states such as 10-day hospitalization in Kentucky. Iowa has a wide range of services.
6. Difficulty in establishing eligibility. In any public assistance program, certain people attempt to take advantage. Because public tax funds are utilized, it is necessary to establish without doubt that the people applying are eligible. This necessitates certain administrative procedures which are essential and possibly could be time consuming.
7. High administrative cost. In states with a relatively low scope of services such as Tennessee, administrative costs are high. This is not true in Iowa.

STATISTICS

As of this week 6,884 applications have been received. Thirty-nine hundred have been approved with 2,675 pending approval. Seventy per cent approvals and 30 per cent rejections is the general trend. Most disapprovals are a result of withdrawal of the claim when the applicants find that a second-class lien can be filed on their property. Two hundred eighty-seven thousand five hundred dollars was the payment made

in April for claims up to the first of April. This is approximately $100,000 more than was paid out in March. The caseload is much greater than anticipated. With just the above figures we will have a permanent patient load of 5,500, and 5,000 was expected to be the maximum. It is interesting to note that 43 per cent of these people have some form of health and accident insurance.

SUMMARY

The Iowa plan is unique in that physicians are paid on a usual and customary fee concept. Iowa is the only state paying bills on this premise. All others have the same fees as OAA patients. Criticism of the plan among physicians concerns mileage and anesthesiologists' fees which were considered earlier. Another is the present fee range is not the usual and customary fee. Everyone knows this and corrective measures will be instituted as soon as possible. Consider the plight Boone County is in. These physicians customarily adjust their fees every 5 to 6 years by a gentlemen's agreement. They were in the process of so doing but had not yet accomplished this in 1960. Therefore, they are being paid on a 1955 basis, or 9 years in arrears. Many of the fee ranges are much less than the OAA schedule. I have learned one thing, that government does not move rapidly. Another area of discontent is the ophthalmologists' prescription arrangement for glasses which is a mistake and again this will be rectified. Another complaint is: certain areas receive higher fees than others. Here again there are arguments on both sides. If we have one set fee schedule for the state, we have lost entirely the concept of a usual and customary fee. If each individual gets the fee he normally charges, why should he care what the doctor in the next county receives?

Gentlemen, no one realizes more than the Iowa Medical Society or the Board of Social Welfare that you have legitimate dissatisfactions in the aforementioned areas. Please bear with us until adjustments can be made. Although no possible comparison can be made and certainly no comparison of stature is intended, I would like to relate an incident concerning Abraham Lincoln. It was early in 1863. We had just lost the battles of Sharpsburg and Fredericksburg. The abolitionists were crying for emancipation. Mrs. Lincoln was sick. The copperheads were strong in Ohio. Draft riots in New York City were of such proportion that a whole army corps was needed to suppress them. The Army of the Potomac had had four ineffective commanders in the course of the year. Certain groups of legislators were clamoring to impeach the president. At this time a group of five ministers sought audience with Mr. Lincoln. They complained about things in general and tried to influence him against what they considered ungodly ways. Mr. Lincoln listened for a while and then interrupted to tell an anecdote. He said: "Gentlemen, if you had converted all your worldly possessions into gold pieces and gave them to Mr. Sandow to carry across Niagara Falls on a tight wire, would you shake and rock the wire?"

As stated before, everyone wants this program to work. Money is always a matter to consider. Physicians can be a tremendous help if they will utilize extreme caution in prescribing drugs and ordering lab and x-ray procedures. We earnestly solicit your help in this area.

We must remember with the MAA program in Iowa, we can prove to the country that payment of welfare bills with a usual and customary fee base, is economically sound and patients receive better service. Then we have proved that the free enterprise system is the best way to handle all services in this country, private insurance or public assistance programs.

REMARKS BY PRESIDENT-ELECT

O. D. Wolfe, M.D.

Mr. Speaker, Members of the House, Fellow Physicians: Whereas the duties of the president do not begin until Wednesday, at the termination of this session, the directives for the coming year are determined by these sessions of the House. It is for this reason that I have asked permission to speak.

I think I could summarize most of what I have to say by making a plea to you for unity. I do not believe very much can be accomplished if we all go in different directions, as we are inclined to do. Obviously, I do not ask for a unity of ideas but a unity of purpose. I would like to suggest that it be our challenge that we stand for something, lest we fall for anything.

I would speak to you in the three categories, of finance, of Blue Shield and of IPPL. On the subject of finance, I think we should remind ourselves that the health industry is an enormous one, and our obligations in this industry do not relate solely to the practice of medicine. We cannot escape our obligations in the field of medical legislation, medical education, lay health organizations, health insurance, hospital care, ancillary services, and even quackery. These areas are not all vacuums, by any means, and they are already invaded by some of those who are refractory to medicine's view-point.

We are only beginning to recognize our responsibilities and our capacities in the field of public relations, and the importance of projecting the true image, not a distorted image of the physician.

Our capacity to meet these responsibilities has been hampered by insufficient funds and by a physical facility which the Society has outgrown. It will be for you to decide whether we move forward, remain stationary, or back away from the issues.

Incidentally, you do not have a copy of my remarks in your packets, solely for the reason I did not have them prepared in time.

Blue Shield: Older physicians will tell you there was a time when the sanctity of the doctor-patient relationship was not invaded by that controversial impostor, the third party. They will also tell you that this relationship also was frequently unsullied by the transfer of currency. I think it is significant that there has been a reversal of this situation since World War I. Perhaps we should remind ourselves that 56 per cent of us cannot remember the onset of the great depression, and that 48 per cent of us, including physicians, are too young, indeed, even to remember World War II.

Blue Shield was originally conceived as a voluntary program permitting the financing of medical care for people of limited means and, also, as a substitute for governmental intervention. The governmental intervention threat has not diminished. In response to this, we have inaugurated more and more programs for more and more income groups. The public desires to prorate and budget its medical bills. It not only asks, it demands this privilege, and it will not be denied. The question is not whether we will provide it, but how, and the choice is simply either between public or private means. If the mechanism is to be public, the physician recognizes he will have very little to say about its development and its administration. If it is

to be private, he would concede that the policy and administration of this system should serve both the interests of the subscriber and the physician.

In the policy-making body of Blue Shield, there is great physician and lay representation. However, physician representation is not synonymous with the Iowa Medical Society. This is a statement of fact; it is not a criticism. As was reported a year ago and as will be reported subsequently, there has been controversy between the Iowa Medical Society and Blue Shield. I think some measure of this is due to a misunderstanding of the prerogatives of the two organizations, which are separate and distinct corporations. I think sometimes we lose sight of this fact. It would seem appropriate to establish the position of the Iowa Medical Society in relation to all matters pertaining to the physician and the practice of medicine, not only for the guidance of Blue Shield but for all interested parties, now and in the future. It seems equally desirable to determine specifically the obligations of each of these policy-making bodies to one another. If the Iowa Medical Society is only a sponsor of Iowa Medical Service-Blue Shield, the presentation of programs and policies to the House of Delegates serves only the function of a physicians' forum. The resolutions of this House, then, become guidelines rather than mandates. Such seems to be the present circumstance, as the subsequent reports will document.

If this be so, many changes in our mechanism are called for, including a new look at the legislative liaison between the two corporations.

The other extreme presumed by many to be the existing practice, though it is not, is a program with policies determined finally and irrevocably by the IMS. If this were so, Blue Shield would be merely a committee of the Iowa Medical Society and, obviously, this would be illegal.

Definitions are, therefore, imperative, and until they have been agreed upon, we must flounder in a sea of imponderables which have divided physicians more than any other single issue, and at a time when our unity is imperative.

Now a final word about IPPL—the Iowa Physicians Political League—headed by Dr. Bob Brown and his committee. I should like to tell you that Dr. Brown and his men are doing a tremendous job, but that they need your help, and you need their help. As far as medicine is concerned, the political scene is seemingly quiet, and the imperceptive person is being lulled into a state of complacency and detached apathy. It is a paradox that intelligent men can observe the abandonment of free enterprise all over the world and yet insist it can't happen here! However uninterested the physician may be in the practice of politics, it is inescapable that the politician is not uninterested in the practice of medicine. Nothing we can do here will count for anything when the government becomes the benefactor of the physician and his patient. It is the opinion of experts that the switch of one vote in the House Ways and Means Committee could yet bring the King-Anderson Bill to the floor of the House, that it would pass, and that it would most certainly pass the Senate. Some members of the House were elected by marginal handfuls of votes. The reversal of these handfuls could be, just as they could have been, the difference between our present system and government control of the practice of medicine.

If any persist in believing that the time to negotiate with politicians is after election, they should look to the desperate plight of the physicians in Saskatchewan and more recently of those in Belgium. They were licked before they started, because you cannot negotiate with a Socialist.

Years ago, George Santayana, a noted American poet and philosopher, said, "Those who cannot remember the past are condemned to relive it."

We can beat this rap, and it will take precious little from all of us, but it will take the combined efforts of all of us. Your freedom and mine were not won by our own efforts. It is our legacy, and we are the trustees of a heritage for which others made bold sacrifice. Is it worth preserving? Ask those who have lost it!

The presentation of Supplemental Reports was the next order of business. Except as hereafter noted, each report was referred to the appropriate reference committee for study.

SUPPLEMENTAL REPORTS OF THE BOARD OF TRUSTEES

Supplemental Report E: General Activities

Presented by S. P. Leinbach, M.D.
Chairman, Board of Trustees

(Referred to the Reference Committee on Reports of Officers. For final action by the House of Delegates, see the report of the reference committee.)

As in 1963, the Supplemental Report of the Board of Trustees to the House of Delegates will again be presented in four sections—General Activities, which I shall present to you now; Finances, which will be discussed by Doctor Sunderbruch; the IMS Building Project, which will be presented by Doctor Seibert; and finally, Blue Shield on which I shall conclude the report. You may recall that last year these reports were lettered A, B, C and D. To avoid confusion, we've lettered the 1964 reports E, F, G and H.

I assume that all of you have studied the reports contained in the HOUSE OF DELEGATES HANDBOOK, and have come to the conclusion that in 1963 your officers, committee members and staff carried out a tremendous amount of business, and implemented a variety of projects—for the good of both the profession and the public. The year 1963 was a year of the Society's greatest activity, and with the blessings and approval of the House of Delegates, this activity will be maintained and increased, where indicated.

In order to conserve time, we shall not go into detail regarding the myriad projects undertaken by the Society. However, there are several items on which the Board wishes to comment, in order to bring you up-to-date on our activities. I'll call them off by number.

1. *The MAA Program*—The development and implementation of the Medical Assistance to the Aged program in Iowa has been reported to you in Society NEWS BULLETINS and through the JOURNAL; a special conference on the MAA program was held on February 16 for all county medical society presidents and county MAA chairmen, and copies of the speeches that were presented at the conference have been made available to the 110 physicians who were in attendance, and also to county presidents and MAA chairmen who could not be present; finally, this morning you have received further reports on this subject from both Doctor Edwards and Doctor Smith. I don't believe I need to add anything more on behalf of the officers and members who worked so diligently in obtaining the

kind of MAA program we felt sure was desired by Iowa physicians—that is, the utilization of the usual and customary fee concept. However, I should like to pay special tribute to Doctors Frank Coleman and William Morrissey who represented the IMS on the Kerr-Mills Advisory Council, and who so adequately and effectively presented and supported the Society's request for the utilization of the usual and customary fee concept under MAA.

2. *Fee Survey*—The up-dating of county ranges of fees is a project of major concern to the officers of the Society, and you can be assured this project will be undertaken at the earliest feasible date.

3. *American Medical Association*—The Iowa Medical Society has long been considered one of the country's outstanding medical societies by the AMA. Many Iowa physicians have held, and still hold, prominent AMA committee and council offices. We are proud, indeed, that a member of this House of Delegates—Dr. Donovan Ward of Dubuque—was elected Vice President of the AMA last June, by acclamation. I am sure you would like to take a moment now to show, by your applause, your appreciation of his work in organized medicine, both at the state and national levels. I am also pleased to report that Dr. Ward is now a candidate for the office of AMA president-elect, and the Executive Council, which includes the entire membership of the Board of Trustees, has wholeheartedly and officially endorsed his candidacy. We are, of coure, hopeful the House of Delegates will also give its official sanction.

In connection wth Dr. Ward's campaign, we intend to go "all-out" in support of his election at the AMA Annual Meeting in June, and appropriate preparations are being made to inform members of the AMA House of Delegates of our enthusiastic endorsement.

Another "Iowa boy who made good" is Mr. Robert B. Throckmorton, former legal counsel for the Iowa Medical Society, and presently general counsel for the AMA. Bob was a valuable, knowledgeable, and effective counsel and lobbyist for eight years, and served very well the interests of Iowa physicians. We are proud that Iowa proved to be such a worthwhile "training ground" for the head of the AMA's legal department. Apparently Bob reciprocates our high regard and warm affection, and I can best demonstrate this by quoting from a letter which he transmitted to the Society shortly after he assumed his new position at the AMA headquarters office:

"The IMS will always be a collection of happy memories for me. . . . I am very much a product of the experiences I was privileged to have with the Iowa Medical Society during the past eight years. These are standing me in good stead, as I have slipped into my new responsibilities with a minimum of trauma because of the excellent training I received at the hands of staff and physicians in Iowa. . . . We always thought we had an outstanding medical society in Iowa, but I have a secret to tell you—it's true! If every state medical society were as strong and well-organized as the IMS, the physicians of America would have no problem they could not resolve effectively. . . ."

4. *IMS Fall Conference for County Medical Society Officers and Other Representatives*—The 1963 Fall Conference was one of our most successful to date—with over 190 physicians from all parts of the state in attendance. Two-thirds of the county medical societies were represented. We hope that if a conference is scheduled next fall, all county society officers will make an effort to be present, since it is a program designed specifically for their benefit.

5. *Area Meetings*—Sixteen area meetings were also held during the fall, in a period of approximately two months. These meetings were set up on direction of the 1963 House of Delegates for the purpose of reviewing matters relating to Blue Shield, as well as providing information on all current Society projects and problems. Additional information on the area meetings will be presented later. However, at this point, we want to call to your attention the participation of Dr. George Scanlon, chairman of the Blue Shield Board of Directors, at these meetings, and to commend him for the time and effort he put forth in representing and speaking for Blue Shield. It was a gruelling eight weeks—and Doctor Scanlon was able to take part in 15 of the 16 sessions.

6. *Governor's Special Board of Health Study Committee*—I have been privileged to serve as the Society's representative on the Governor's Special Board of Health Study Committee, which also made recommendations concerning the appointment of a new Acting Commissioner of Health. We are honored to have the Commissioner—Doctor Arthur P. Long—with us today. Art is an Iowa boy, and a classmate of mine and many other members of the House. The State of Iowa, and the Medical Society, are fortunate to have him as head of the Health Department. The members of the Board of Trustees had an opportunity to visit informally with Dr. Long both before and after he assumed his new position, and we can assure you that he intends to become well-acquainted with the physicians of Iowa, and to maintain a close liaison with the Iowa Medical Society. At this time, with your permission, I want to present Dr. Long, who will speak to you briefly.

The Governor's Special Study Committee has been very active, and since its establishment it has met on an average of twice a month. On behalf of the Medical Society, I have indicated an interest in the composition and duties of the State Board of Health if it is to be reorganized, and have every reason to believe that recommendations emanating from the Medical Society will be respected in both areas. We are especially interested in seeing to it that there is adequate physician representation on the Board of Health.

At this point, and as more of an aside than anything else, the Board of Trustees wanted you to be informed of my recent appointment as a member of the Community Health Project Review Committee of the Department of Health, Education and Welfare. I must admit that I accepted this appointment with some reservation, but after exploring the matter with officials of the AMA, and the other members of the Board of Trustees, I was left with the impression that in the interests of organized medicine, this was not an appointment I could refuse to accept.

7. *Blood Banking Study*—During the past year, circumstances have developed, particularly in reference to Blue Cross-Blue Shield, which prompted the Board of Trustees to request the IMS Committee on Blood Banking to prepare a statement explaining in detail the steps involved in Blood Banking procedures. The committee has completed its assignment and it will present a Supplemental Report to this House of Delegates.

8. *Medicare Contract*—The contract the Iowa Medical Society enters into with the Department of Defense for the administration of the Medicare program in

Iowa will expire on September 30, 1964. As previously reported, the Board of Trustees will attempt to re-negotiate the present Medicare fee schedule on a usual and customary fee basis. We may encounter difficulty in this area since we are aware that Medicare is attempting in several of our neighboring states to actually reduce the fees now being paid. Medicare appears to be conducting an intensive campaign to relate Medicare fees to existing low full service Blue Shield programs in each state. It is justifying this position by relating an average income of all servicemen to a Blue Shield program which is full service only up to a specified income level. Medicare seems to forget that the individual physician voluntarily elects to participate in Blue Shield, a program which he helps sponsor, and therefore is sometimes willing to accept something less than standard charges for a variety of reasons. The IMS has retained an actuarial consultant, Mr. Carl Tiffany, of Chicago, who will be available throughout the annual meeting for advice in connection with all matters relating to third parties in medicine. These include Medicare, MAA, Blue Shield, etc. Mr. Tiffany is recognized as an authority on Blue Shield, having served for many years as consultant to Blue Shield plans throughout the country. He has conferred with the IMS Blue Shield Pathology Study Committee, and will continue to assist that group in its deliberations.

9. *Utilization Study*—The subject of over- or under-utilization of hospital, medical and surgical services has been a matter of interest and concern to the Society, and a report on what is contemplated in this connection will be presented today by the chairman of the Committee on Medical Service.

10. *Association of the Professions*—Dr. Sunderbruch represented the Society at the Annual Meeting of the Michigan Association of the Professions, and prepared a detailed and enthusiastic report concerning the activities and objectives of that organization. Essentially, MAP was established to serve, promote and enhance the professions, the men and women who engage in these professions, and the public which they serve.

Two years ago, the Society invited representatives of the professions in Iowa to a meeting to consider the feasibility of establishing in Iowa an organization similar to MAP, but there did not seem to be enough common interest at the time to warrant further exploration. However, if it meets with the approval of the House of Delegates, the Board of Trustees plans to schedule another meeting of professional representatives to determine whether or not it would be desirable to form an Iowa Association of the Professions, and to proceed with the project if a favorable conclusion is reached.

11. *House of Delegates Proceedings*—At the suggestion of a Society member, the Board of Trustees studied the feasibility of printing the proceedings of the House of Delegates as a separate publication, rather than as a part of the JOURNAL OF THE IOWA MEDICAL SOCIETY, in order to eliminate public access to information concerning the business affairs of the Society, as well as actions of the House of Delegates. Following consideration of this matter, the Board concluded that the publication of the proceedings as a separate pamphlet and distributing it to over 2,000 Society members would not guarantee the restriction of this information to IMS members only; hence, the Board agreed the official proceedings of the House should continue to be published in the JOURNAL since the members have become accustomed to the JOURNAL as their source of information on IMS policies, and this fact enhances the prestige and readership of the JOURNAL.

12. *Membership Roster*—The Board has approved publication of a comprehensive DIRECTORY OF PHYSICIANS, to include the names and addresses of all Society members, arranged alphabetically and by county, for distribution to all physicians as a membership benefit. Additional copies of the roster would be available at a reasonable cost to physicians and other individuals, on request. If possible, this roster will be available in July, although this first edition may require considerable preparation time, and thus publication may be delayed until next year.

13. *Iowa Medical Foundation*—Dr. Scanlon, President of the Iowa Medical Foundation, will present a financial report on this organization, and we believe this project has tremendous potential. The Foundation's Board of Directors will hold its annual meeting on Monday afternoon to develop additional promotional plans and to consider worthwhile projects in which it should participate. In the future, members of the Society will see considerable evidence of the interests and activities of the Iowa Medical Foundation.

14. *Baldridge-Beye Memorial Fund*—A resolution on this memorial is included in this report, Supplemental Report E:

RESOLUTION

SUBJECT: BALDRIDGE-BEYE MEMORIAL FUND

WHEREAS, In 1936 the Baldridge-Beye Student Loan Fund was established as a memorial to two physicians who lost their lives carrying out assignments for the Iowa Medical Society, and

WHEREAS, In 1951 the Iowa Medical Society vitalized the Memorial and voted to allot $1.00 per dues-paying member to the Memorial, and

WHEREAS, In 1960 the House of Delegates directed the Baldridge-Beye Memorial Fund be contributed to the IMS Education Loan Fund effective January 1, 1961, and

WHEREAS, The Iowa Medical Society Educational Loan Fund has now been reorganized into the Iowa Medical Foundation, and

WHEREAS, The Iowa Medical Foundation is rapidly becoming a self-supporting Foundation, receiving contributions from individuals and organizations, now therefore be it

Resolved, That effective January 1, 1964, the allocation from IMS dues for the Baldridge-Beye Memorial Fund be discontinued and be it further

Resolved, That a recommendation be transmitted to the Board of Trustees of the Iowa Medical Foundation inviting it to establish a suitable memorial to perpetuate the Baldridge-Beye Memorial Fund.

If this resolution is approved by the House of Delegates, this matter will be presented to the Board of Directors of the Iowa Medical Foundation.

15. *Appearance of AMA President at Grinnell College*—On March 10, Dr. Edward R. Annis, president of the AMA, was a guest of Grinnell College and participated in afternoon and evening programs sponsored by Grinnell's Program in Practical Political Education. The Iowa Medical Society cooperated with Grinnell College in publicizing the presentations by Dr. Annis, and arranged a luncheon and press conference in Des Moines at which representatives of the DES MOINES REGISTER AND TRIBUNE, Associated Press, United Press International, WOI-TV, KRNT-TV and WHO-TV were present to interview Dr. Annis on a variety of socio-economic problems of interest to medicine.

16. *Annual Meeting Program*—The Board of Trustees wishes to congratulate the members of the Program Committee which worked so diligently in de-

veloping the program that will be presented at the Fort Des Moines Hotel on Monday and Tuesday. An outstanding array of speakers in the fields of medicine, mass communications, banking, education, and legislation will be on hand for the next two days to impart valuable information to the members of the Society—and I hope all of you will attend the program sessions.

17. *Printing of Executive Council Meetings in the* JOURNAL—Last year, the House of Delegates approved a motion that was introduced from the floor that a digest of the deliberations and conclusions of the Executive Council of the IMS be published in the JOURNAL OF THE IOWA MEDICAL SOCIETY, to be read by all interested members of the Society. There has been compliance with this action, but the Board of Trustees wishes to point out that there may be occasions when it would not serve the best interests of the medical profession to have these deliberations recorded in the pages of the JOURNAL since access to the JOURNAL is not limited to members only. We would hope the House of Delegates would permit the officers of the Society to exercise judgment on the question of what should or should not be published in the JOURNAL. We believe reporting to the general membership on matters involving the Executive Council is reasonably well accomplished, and yet controlled, through the medium of a newsletter that is sent to all county deputy councilors following meetings of the Executive Council.

In concluding this summary of IMS activities, we also want to call your attention to

. . . the Sixth Annual Hawkeye Science Fair, cosponsored by the Iowa Medical Society, DES MOINES REGISTER AND TRIBUNE, and Drake University, which was held at the Veterans Memorial Auditorium in Des Moines on April 10-11

. . . the Annual Program sponsored by the Iowa Medical Society for senior medical students, which will be held in Iowa City this coming Saturday

. . . the statewide Conference on Medical Quackery on May 27, which is being sponsored by the Iowa Interprofessional Association, of which the IMS is a member

. . . The Woman's Auxiliary, which so ably assists the Society in carrying out various legislation and educational projects

. . . the publication of a new edition of the HANDBOOK OF RESOURCES, which is a valuable reference to all physicians and individuals in allied health organizations

. . . the participation of IMS representatives at no less than 40 regional and national meetings during the past year, in addition to their attendance at hundreds of community, county and state meetings.

I am sure no more explanation is needed to explain why the IMS maintains its position as a respected and influential leader in the State of Iowa—and at the national level of organized medicine.

Before closing this section of the Board of Trustees Supplemental Report, we wish to pay tribute to the 13 men and women who work in the IMS headquarters office. We are fortunate, indeed, to have this loyal staff working in our behalf—individuals who are willing to devote time and energy far beyond the call of duty.

Until January 1, 1964, the Society had two full-time fieldmen. However, as of that date, one of the fieldmen, Mr. Morris Bandy, was appointed as the administrator of the Iowa Physicians Political League. For several years. Mr. Bandy served in a field representative capacity for Blue Shield and the IMS, and the Board of Trustees wants to take this opportunity to express appreciation to him for efforts on behalf of organized medicine. We wish him every success in his new asignment.

Effective May 1, we will add a new man to the administrative staff, and at this time I would like to introduce him to the House of Delegates. Mr. Don Neumann comes to the Iowa Medical Society from Drake University, where he has served for several years as director of informational services, and he brings to the IMS experience which we believe will add additional strength to our working force.

At the head of this efficient group of people is Mr. Donald L. Taylor, the executive director of the Iowa Medical Society. Much of the Society's prestige and respect is due to Don's extraordinary capabilities as a medical society executive, and his true and unfaltering dedication to the physicians of Iowa—their principles, their ideals, and their objectives. Don never lets an opportunity pass to enhance the effectiveness and influence of the medical profession. He has been honored at the local, state and national levels as both an outstanding executive and an outstanding man. The physicians of Iowa are proud, I'm sure, that he is "one of the family."

This concludes the Board's report on General Activities, and I'll now ask Dr. J. H. Sunderbruch to come to the rostrum to present the next portion of our report.

Supplemental Report F: Finances

Presented by J. H. Sunderbruch, M.D., Trustee

(Referred to the Reference Committee on Reports of Officers. For final action by the House of Delegates, see the report of the reference committee.)

The report just presented by Doctor Leinbach on General Activities has provided a broad description of Society programs and projects. To maintain a medical society as active and progressive as the Iowa Medical Society requires adequate financing. It is our impression the members are in general agreement with the degree of performance by the IMS and, as a matter of fact, in some respects would ask even more to be done in their behalf.

Unpredictable circumstances have made it necessary for the Society to engage in deficit financing—a practice which the Board does not enjoy or, in fact, approve. However, since 1961, income has not been sufficient to meet expenses. Yearly deficits have been as follows: 1961—$8,509.20; 1962—$12,793.26; 1963—$23,232.89; an aggregate total of $44,616.35 during the three-year period.

It is well to remember that from 1955 through 1960, Society income exceeded expenses which can be traced in part to the excellent fiscal status of the JOURNAL OF THE IOWA MEDICAL SOCIETY during that period. However, in 1961 and subsequent years, JOURNAL advertising income has decreased markedly and a portion of IMS dues has been transferred to this project to assist in offsetting the sizable loss.

These deficits during the past few years have practically depleted the Society's liquid reserves. We have $5,000 in government bonds, which constitute the only readily-available reserve for operating expenses. As indicated in the Treasurer's Report appearing in the HANDBOOK, IMS basic reserves include the present headquarters building, the property in West Des Moines,

which was purchased as a possible future building site, and about $30,000 in a building fund.

The last dues adjustment occurred in 1962, when they were increased from $80 to $90 per member. Since the dues for 1964 were maintained at the $90 level, the Board of Trustees, in approving the 1964 IMS budget, devoted a great amount of time and effort in critically analyzing the Society's financial commitments, which resulted in the elimination of some budget items and a reduction in others.

The Board of Trustees would have recommended an increase in dues effective on January 1, 1964, but deferred proposing an increase in order to give additional study to curtailment of expenses and increases in income. Specifically, the Board was hopeful a marked recovery would be shown in JOURNAL income, but this did not occur.

Concerning the 1964 budget, the Board of Trustees took the following steps in an effort to adjust and reduce expenses:

1. The JOURNAL OF THE IOWA MEDICAL SOCIETY is being reduced in over-all size to the extent feasible, keeping in mind its prestige that must be maintained.

2. Legal services are obtained on a fee-for-service basis, and only when necessary, consistent with good business judgment.

3. Several shifts in staff assignments have been consummated.

4. It is being recommended that the contribution from dues to the Baldridge-Beye Memorial Fund be eliminated.

5. The reserve for building depreciation was eliminated from the 1964 budget.

The first three months of operation in 1964 indicate that the austerity moves outlined above are having an effect. The Board of Trustees realizes these cutbacks are, at best, temporary remedies; further, that if the Society is to operate at a maximum efficiency, two courses of action remain:

1. Further curtailment in services and activities.

2. An increase in IMS dues.

It is the firm opinion of the Board of Trustees that the Iowa Medical Society has enjoyed for several years a position of respect and confidence with its members, as well as with other lay and health organizations, on a local, state and national level. If this position is to be maintained and if the membership continues to feel that its state organization should play a prominent role for the medical profession in scientific, legislative, public relations and medical service areas, the Society must be adequately financed.

The Board of Trustees therefore recommends that the dues for 1965 be increased $35 per member, with the stipulation that for the next five years, $20 of this increase will be earmarked for the financing of a new Society headquarters building. The building program will be presented in a separate report.

The dues increase, if adopted, will provide sufficient income to enable the Iowa Medical Society to fulfill its obligations.

There are many areas of Society financing that cannot be dealt with in sufficient detail in this brief report. Therefore, members of the Board of Trustees will be in attendance at the hearings of the reference committee on Reports of Officers to discuss all questions regarding the Society's financial circumstances.

Now Dr. Seibert will report to you on the building project.

Supplemental Report G: Building Project

Presented by C. W. Seibert, M.D., Trustee

The proposal to build a new home for the Iowa Medical Society was first brought to the House of Delegates in 1962, and authority was provided for the Board of Trustees to proceed with an investigation, and with preparation of plans for adequate facilities for the office of the Iowa Medical Society.

This action was based on the conclusion that the present building is too small, and that if the activities of the Society are to be maintained and actually increased, an expansion of office facilities is necessary.

In 1963, the Board of Trustees reported to the House of Delegates that a three-acre tract of land had been purchased at Tenth and Grand Avenue, in West Des Moines, Iowa. The Reference Committee on Reports of Officers, in its report to the House of Delegates in 1963, commented as follows:

"In our opinion, the Board of Trustees exercised sound judgment in the selection of a building site, and is to be commended for this property acquisition. The records presented to the Committee confirm the fact that the Board made this purchase only after thorough investigation and advice from appropriate professional consultants. The next consideration is a future building upon this site. This Committee recommends reaffirming the mandate of the previous House of Delegates, and proposes that the Board of Trustees actively pursue architectural consultation and methods of financing this structure, for presentation at a future House of Delegates meeting."

Last year, geographic and site plans were made available to all members of the House of Delegates, which described in detail the size and location of the property in West Des Moines, and the various accesses to it from all parts of the city. This information is once again provided in the delegates' packets, particularly for the information of new delegates.

As reported previously, the Iowa Medical Society's building site was purchased after a thorough investigation by a professional appraiser, and after consultation with an architect. The Board of Trustees made the purchase on the basis of the following considerations:

. . . The size, location and purchase price of the property were attractive, as well as the opportunity to negotiate with a single seller.

. . . As previously mentioned, the tract of land contains approximately three acres. Thus, the Society should be able to sell off half of it, and thereby realize a return of half the original investment, besides gaining the added privilege of being a little selective as to the Society's neighbors.

. . . One of the major problems at the present headquarters-office location is the lack of adequate parking space. At the West Des Moines site, it is our understanding that even allowing for an expansion of the building, if one is constructed, there will be parking space for at least 50 cars.

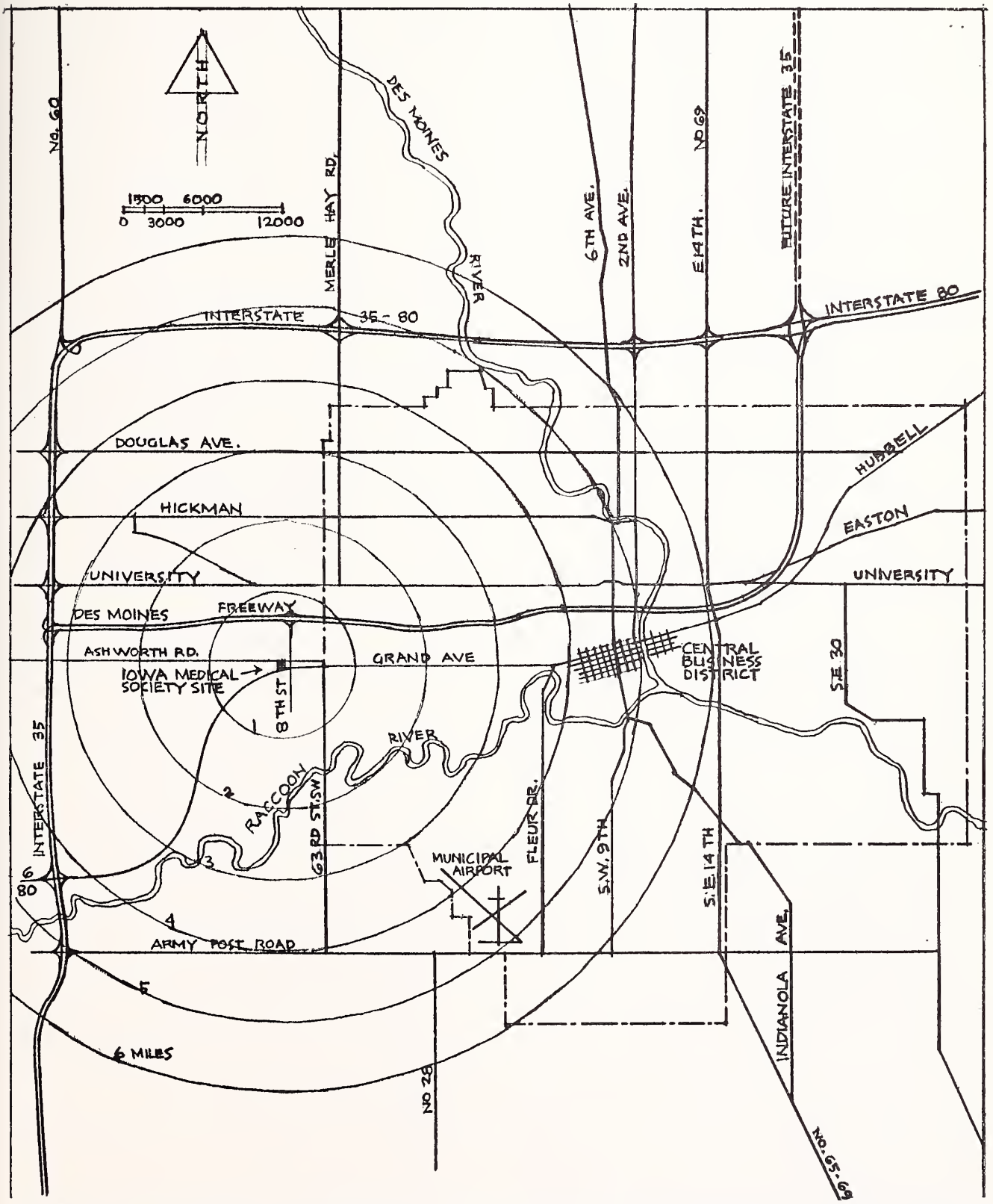
. . . As a matter of interest, I might mention that last week the Society was approached by a prospective purchaser who is interested in acquiring 100 front feet, or approximately one-third of the property, and it was indicated that the buyer might be willing to pay as much as one-half of the original purchase price of the land. This type of interest didn't come as a surprise, since the general area is under development, and will be easily accessible to the intersecting east-west and north-south interstate highways, as well as

within two or three blocks of an interchange of the Des Moines Freeway, when it is completed.

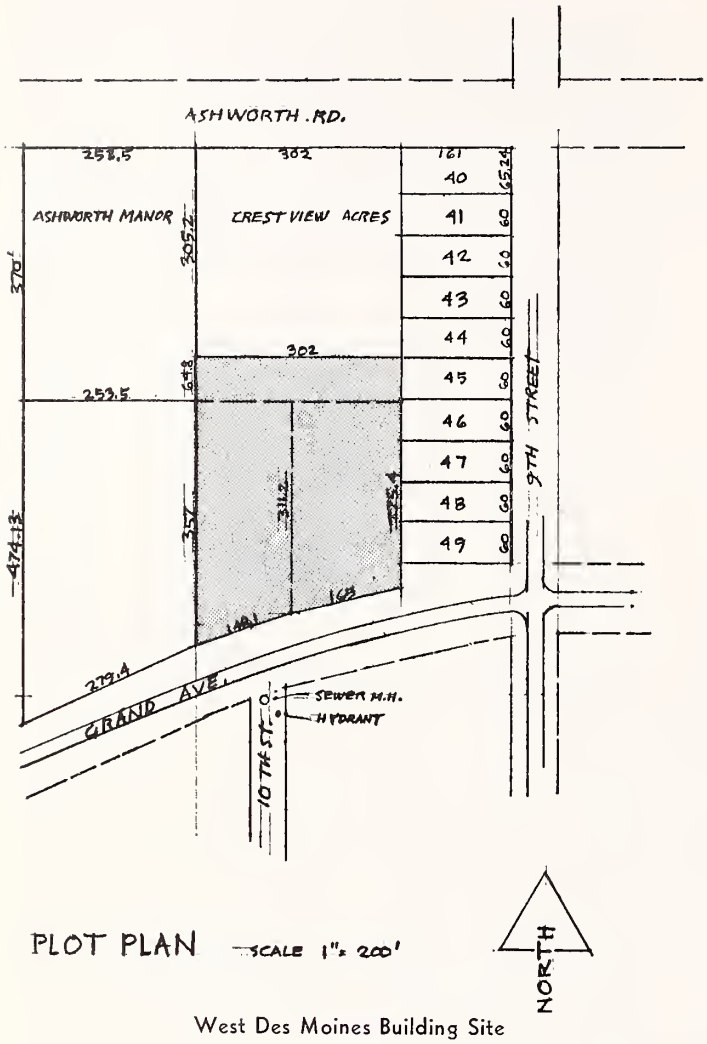
. . . One other item that deserves mention is the fact that 63rd Street is to become a finished thoroughfare from Grand Avenue south to Army Post Road, thus providing ready access to air transportation.

. . . As most of you know, Grand Avenue is a main artery through Des Moines, and continues through West Des Moines, passing directly in front of the IMS property. The portion of Grand Avenue in West Des Moines which extends past the building site is soon to be widened to 50 feet of concrete.

As authorized by the House of Delegates, the Board of Trustees has consulted with an architect, on a fee-



West Des Moines building site in relationship to downtown Des Moines, Municipal Airport, and principal highways.



West Des Moines Building Site

for-service basis, to develop preliminary plans for your consideration today.

The front of the building has been developed to take advantage of the existing landscape and to provide for future growth. The design is basically simple, but it exhibits dignity and stability, which we believe are characteristics in keeping with the public image of the medical profession. If we get to the point of selecting building materials, we shall strive to achieve order, harmony and conservatism.

The building is planned in a perfect square, around an interior light court. The architect informs us that this square shape will make it possible to utilize the maximum amount of space available, and will be ideal as an office arrangement. Furthermore, it will provide a pleasing exterior design, with a symmetrical central-entrance feature. The interior arrangement provides for ample private offices and work areas for the members of the staff, as well as for a library-lounge, adequate in size to accommodate a meeting of the Board of Trustees or a committee, and to make allowance for growth.

The lower floor or basement will include two conference rooms—one designed to accommodate meetings of the Executive Council comfortably, and the other to accommodate the Judicial Council. The larger of the two rooms is large enough to permit the Iowa Medical Society to continue hosting the annual meeting of the Iowa Interprofessional Association and other large-group meetings. The smaller of the two conference rooms would certainly constitute a usable area for any committee of the Society. Even in the present Society building, it is sometimes necessary to have as many as three separate meetings in session at once. This is particularly true on the days when the Executive Council meets, for on those occasions the Board of Trustees and the Judicial Council meet separately, and later convene as the Executive Council. Having adequate meeting-room space will facilitate the scheduling of two or more meetings on the same day, and this will save many doctors from having to make an extra trip to the city.

As mentioned earlier, if we proceed with this building program, it will be possible to sell-off approximately half of the property and still have all the land that the Society is likely to need at present and in the distant future. The placement of the building on the site allows for a drive to the parking area at the rear, as well as an entrance drive for visitors' cars and taxis. Sufficient area will remain to the north of the building to permit future expansion, and parking to the north of the site will be planned at the start, to eliminate disturbance in the future.

In our conferences with the architect, four points have been stressed: (1) adequate meeting accommodations; (2) adequate parking space; (3) adequate storage space; and (4) opportunity for expansion.

This building that I've discussed with you would provide approximately 12,000 square feet of floor area. The present headquarters building contains 4,000 square feet.

As a part of preparing for a possible new building, a committee of the Board visited the new headquarters office of the Indiana State Medical Association, in Indianapolis, and was greatly impressed. The Indiana building contains approximately 18,000 square feet, which we concluded after our examination would be more than an IMS headquarters office would require. The Indiana Society has probably 1,000 more members than the IMS, but based on the Committee's observations, it is not involved in the number of activities, nor does it have the demands placed on it that we have in Iowa.

Included in your packets of materials is Resolution Number 18, sponsored by the Fifth Councilor District Caucus, on the subject of an IMS office building. In support of this resolution, Dr. John Gustafson, of Des Moines, an alternate delegate from the Polk County Medical Society, after conferring with the Board of Trustees, developed information on the West Des Moines property as well as on two additional building sites. Dr. Gustafson plans to elaborate on his proposals at the open hearing of the Reference Committee on Reports of Officers, which will consider this matter. The Board of Trustees has learned, through its conferences with Dr. Gustafson, that he is an extremely knowledgeable person as regards building planning and construction.

On each occasion that the Board of Trustees has discussed a building program with the House of Delegates, it has emphasized that the Board members have not felt strongly about pursuing this project unless such is the wish of the House of Delegates.

This is the third occasion on which a building program has been discussed, and since a detailed progress report was presented in the July, 1963, JOURNAL OF THE IMS, all delegates and members should be fully aware of the Society's housing problem.

In the report on finances just presented by Dr. Sun-

derbruch, it was recommended that the IMS dues be increased by $35 per year, effective January 1, 1965, with the understanding that $20 of the increase be earmarked for five years to finance the building.

Consultation with the architect and informal conversations with Des Moines builders have revealed that building costs per square foot, for the type of construction we have in mind, will range from $15 to $20. If the House of Delegates should authorize the Board of Trustees to proceed, based on these tentative plans, it would, of course, firm up the costs, and insist on competitive bidding.

We anticipate gifts that will assist in financing and furnishing the new office, and very recently we were informed that a generous memorial contribution will be forthcoming if the Society builds within a reasonable period of time. We expect there will be other similar contributions, when and if the building plans reach a final stage.

The Board of Trustees has pursued this building project very deliberately, and does not contemplate stepping up its pace. We feel that after considering all of the facts, the members of the House of Delegates should direct the Board of Trustees in this matter. We shall move as rapidly or as slowly as you indicate—or, if necessary, not at all.

Dr. Leinbach now will present that part of the Supplemental Report of the Board of Trustees which concerns Blue Shield.

Supplemental Report H: Blue Shield

Presented by S. P. Leinbach, M.D.
Chairman, Board of Trustees

(Referred to the Reference Committee on Blue Shield. For final action by the House of Delegates, see the report of the reference committee.)

In the interests of continuity, a copy of the 1963 Board of Trustees Supplemental Report D to the House of Delegates, and subsequent actions of the Reference Committee on Insurance and Medical Service of the House of Delegates, have been placed in the delegates' packets for review and study. They are identified as Exhibits No. 1 and No. 2 in your packets. Other materials pertinent to the information which will be presented in this report are also included, and reference will be made to them.

Very appropriately, the Iowa Medical Society for years has spent a great amount of time in a cooperative effort at attempting to resolve minor differences between the Society and Blue Shield, and in promoting Blue Shield programs. Of late, however, the Society has found it necessary to spend more time on Blue Shield than on any other single problem or project.

The Board of Trustees is convinced this situation cannot continue, and therefore, this report will provide full disclosure of all facts concerning Iowa Medical Society-Blue Shield relations, and asks guidance from the House of Delegates as to the future.

The members of the Board of Trustees, individually and collectively, do not relish having to cope with these Blue Shield problems, but having assumed the responsibilities of office, the Board members feel an obligation to present a forthright report. We would be neglecting our duty and our loyalty to the Medical Society if we did not outline some of the circumstances that are currently disturbing the relationship between the Society and Blue Shield. As far as humanly possible, this report is factual and without prejudice—and documentary evidence is available to support all of the statements included.

Decisions arrived at by this House of Delegates, based on this report, will be as important to the medical profession in Iowa as any that a House of Delegates of the Iowa Medical Society has ever been called upon to make. Therefore, it is absolutely essential that all delegates listen attentively to the information as it is presented, and that they study carefully all of the exhibits that have been provided.

To begin, we want to bring to your attention the general conclusions that were incorporated in the 1963 Board of Trustees Supplemental Report D to the House of Delegates, as follows:

1. That there have been poor communications between the Iowa Medical Society and Blue Shield at the policy-making and administrative levels.

2. That much of the unpopularity of Blue Shield stems from misunderstanding between it and individual physicians, and between it and the Iowa Medical Society.

3. Improved relations are necessary between the two organizations if they are to continue to serve each other's interests, as well as the public's.

4. Evidence of the poor communications between the two organizations is exemplified as follows: (a) That plans approved by the House of Delegates have been subsequently modified without the knowledge of the sponsoring Medical Society or its members, (b) That contracts approved for sale to specific categories of people have been offered to others without the knowledge or approval of the parent organization.

Progress has been made in some of these problem areas, but regression has occurred in others. To demonstrate, the Board of Trustees wishes to present the following information regarding various situations that have developed during the past year:

Critique of Supplemental Report D: Approximately one month, following the close of the 1963 Annual Meeting of the Iowa Medical Society, the president of Iowa Medical Service (Blue Shield) transmitted a memorandum to all members of the Blue Shield Board of Directors, in which the accuracy of the Board of Trustees' Supplemental Report D, concerning Blue Shield, was challenged. The Board of Trustees was concerned that its conclusions and recommendations incorporated in Supplemental Report D were considered allegations, rather than constructive suggestions. Thus, in response to this memorandum, and at the request of the chairman of the Blue Shield Board of Directors, the Board of Trustees prepared a statement which explained and substantiated the information contained in Supplemental Report D. These materials are in your packets as Exhibits No. 3 and No. 4.

Area Meetings: In compliance with a recommendation which the Reference Committee on Insurance and Medical Service made to the House of Delegates and which was approved by the House, the members of the Board of Trustees of the Medical Society met in joint session with the Blue Shield Board members on July 11. The purpose of this first joint meeting was to develop plans for a series of area meetings to acquaint the physicians of Iowa with the contents of the 1963 Report of the Policy Evaluation Committee to the House of Delegates concerning Blue Shield and other related matters, as well as concerning the general affairs of the Society.

As a result of this conference, the Iowa Medical Society arranged 16 area meetings. These meetings were

conducted throughout the state during a two-month period, from September 24, 1963 to November 19, 1963. A report on these area meetings is included as Exhibit No. 5 in your packets, but I'll summarize some of the more important comments:

1. There was considerable discussion and complaint regarding the fact that the Blue Chip contract as printed and sold is substantially different from the concept of the Blue Chip contract as explained to and approved by the House of Delegates. The gist of the comments and questions was that when the Insurance Commissioner insisted that the words "in the community" be added to the definition of *a* physician's usual and customary charge, and when the $5 unit was utilized as a basis of payment for almost all Blue Chip claims, these two major changes should have been brought promptly to the attention of the IMS.

2. There were complaints that the B300G and B450 contracts were being sold to everyone, despite the House of Delegates' intent that these two contracts be sold only to national accounts and federal employees.

3. At almost every meeting, doctors commented that Blue Shield has departed from its original philosophy of covering the low-income group and is now covering income groups of much higher levels—while at the same time not raising the fee schedule proportionately.

4. Direct opposition to further increases in full-service levels was expressed, particularly in view of administrative problems with Blue Chip.

5. Many doctors questioned whether Blue Shield really followed the recommendations of the IMS.

6. Praise or support for Blue Shield was expressed by one or two individuals at four meetings, and at a fifth one, a group of nine physicians expressed overall support with such comments as, "we have no problem with Blue Shield" and "Blue Shield is a good deal."

Fall Conference Program: As an additional effort to acquaint the profession with some of the Blue Shield programs, presentations concerning Blue Shield had a prominent place on the program of the IMS Fall Conference for County Medical Society Officers and Other Representatives, which was held in Des Moines on September 18, 1963. At that Conference, the chairman of the Blue Shield Board of Directors presented essentially the same material that he utilized at the area meetings, and which was published in the December, 1963, issue of the IMS JOURNAL. In addition, the Commissioner of Insurance for the State of Iowa presented a paper on Blue Shield and Blue Cross. It was not published in the JOURNAL, since there were points contained in his manuscript which the Society felt would be of medical family interest but not public concern. However, in order for the members of the House of Delegates to have the benefit of his comments, the Commissioner's paper has been reproduced and is included in your packets as Exhibit No. 6.

Major Medical Contracts: At a meeting of the IMS Executive Council on November 21, 1963, Dr. Robert C. Larimer, a Blue Shield Board representative on the Executive Council, reviewed for the first time and for informational purposes, a major medical contract developed by Blue Shield. Dr. Larimer informed the Council that the contract would be sold only as a supplement to basic coverage; payment for services would be made directly to the patient, partly for convenience and partly because payment would cover total billings; and either a $5 unit (Green Book) or county ranges of fees would be utilized as a guide for screening claims.

Also at the Executive Council meeting, a memorandum from the president of Blue Shield to members of the Blue Shield Board of Directors was reviewed, in which it was reported that Blue Shield is ready to proceed with printing and selling major medical coverage. Those present were reminded that at the 1963 Annual Meeting, the House of Delegates recommended that it be provided opportunities to review all major contracts developed by Blue Shield before public sale, and the Executive Council was assured by Blue Shield representatives that the major medical contract would be submitted to the House of Delegates before being placed on the market.

It was also pointed out that the House of Delegates recommended that Society representatives join with Blue Shield officials in meeting with the Iowa Insurance Commissioner to review proposed new contracts, and the Council was informed by Blue Shield representatives that, as indicated in the memorandum to the Blue Shield Board of Directors, a conference between Blue Shield and the Commissioner had already been held, but that such conferences are necessary to work out the mechanics of developing a contract.

The Executive Council approved a motion reiterating the recommendations of the Reference Committee on Insurance and Medical Service concerning Blue Shield which were based on Supplemental Report D of the Board of Trustees as adopted by the House of Delegates in April 1963.

On Thursday, December 5, the president of Blue Shield called the Society office, said that he had received the minutes of the Executive Council meeting held on November 21, and stated that portions concerning Blue Shield were not entirely clear to him. Since he had not been able to attend the November 21 session, he requested opportunity to hear recordings of the meeting. It was arranged for him to hear them, and on December 6, the chairman and a member of the Board of Directors of Blue Shield, and its president, visited the Society office and heard the portions of the Executive Council proceedings that pertained to Blue Shield.

Subsequently, it was mutually agreed by IMS and Blue Shield officials that because of the apparent misunderstandings, Blue Shield major medical programs should be the subject for discussion at the joint meeting of IMS and Blue Shield officers which was to be held on December 18.

Immediately following the joint meeting on December 18, at which time policy actions of the Iowa Medical Society and Blue Shield relative to the development of a major medical plan were reviewed, the Executive Committee of the Blue Shield Board of Directors held an emergency session, and passed the following motion:

"Pursuant to a joint meeting of the Board of Trustees and officers of the Iowa Medical Society and the officers of Iowa Medical Service, the Executive Committee of the Board of Directors of Iowa Medical Service hereby submits to the Executive Council of the Iowa Medical Society galley proofs of a Major Medical *Rider* to be attached to basic Blue Cross and Blue Shield contracts and to be offered for sale to the citizens of Iowa as an optional benefit.

"The Executive Committee of Iowa Medical Service requests the Executive Council to refer to previous actions of the House of Delegates in April, 1961, and April, 1963, in regard to a Major Medical *Rider;* and to review and report on this Major Medical *Rider* ten days prior to the next meeting of the Board of Directors of Iowa Medical Service, which will be held on January 26, 1964."

Also following the joint meeting on December 18, the Board of Trustees of the Iowa Medical Society met in regular session, and its recommendations regarding this matter were set forth in a letter to the chairman of the Blue Shield Board of Directors, which is in-

cluded in your packets as Exhibit No. 7. However, I should like to quote the following conclusions which were incorporated in that communication:

"After considering this matter at length, taking into account previous actions of the policy-making bodies of the Iowa Medical Society, the Board of Trustees concluded the best interests of all parties concerned would be best served if the major medical proposal were to be studied carefully by the Policy Evaluation Committee, and its recommendations presented to the House of Delegates in April, as a part of its over-all report on Blue Shield. . . . With the knowledge that the House of Delegates has requested on at least two occasions the development of a Blue Shield major illness plan, there is every reason to believe this program, if presented to it properly, will be approved. Postponing the Major Medical Program until April would provide ample time for careful consideration of the contract, as well as other Blue Shield proposals that will come before the Policy-Evaluation Committee. Further, it is our understanding the Blue Shield Board of Directors will not consider implementation of this contract until the latter part of January, and therefore withholding public sale of it until the IMS Annual Meeting in April would involve only a 90-day period."

In response to the request of the Blue Shield Executive Committee, and in the interest of prudence and long-range cooperation between the IMS and Blue Shield, the president of the Medical Society called the Executive Council into special session on January 16. At the special session, the president of Blue Shield reviewed the IMS actions which had preceded the development of major medical coverage by Blue Shield, and commented on these actions from Blue Shield's point of view. In essence, he reported that in January, 1961, the Blue Shield Board of Directors had approved a report from its Insurance Committee to develop a comprehensive plan for including major medical coverage in Blue Shield offerings; that the Policy-Evaluation Committee of the Society had been aware of this action, and its recommendation to establish major illness or catastrophic plans had been approved by the House of Delegates in 1961; that a detailed major medical contract developed by Blue Shield staff had been reviewed and approved by the Blue Shield Board in October, 1961; that a major medical contract for federal employees had been approved by the Board of Directors and had become effective on November 1, 1962—and since that time over 10,000 contracts covering 30,000 people had been sold; that the IMS Policy-Evaluation Committee had been aware of the federal employees' major medical contract, and had been aware of efforts to adapt it for local sale, as indicated in the Policy-Evaluation Committee's report to the House of Delegates in 1963; that following a favorable interpretation of the definition of "physician," the Blue Shield Board had approved proceeding with the printing and selling of major medical coverage; that following the November 21 meeting of the Executive Council, preliminary printer's proof of the contract had been held in the Blue Shield office, pending further clarification of the availability of the contract.

In reference to actions outlined by the president of Blue Shield in connection with the development of major medical coverage, a member of the IMS Policy-Evaluation Committee explained to the Council that following approval by the House of Delegates of a Policy-Evaluation Committee recommendation to establish a major medical contract, neither the Committee nor the House of Delegates had received information regarding the content of the contract, and the contract had never been included in a portfolio of Blue Shield policies provided to Policy-Evaluation Committee members by Blue Shield. Other Society officials who had been present at the 1961 House of Delegates meeting stated that no mention was ever made of major medical coverage in connection with the federal employees' program, and at no time, until the November 21 meeting of the Executive Council, had specific information regarding a major medical contract, either for federal employees or for local sale, or information regarding implementation of such contracts, been presented to the Executive Council, House of Delegates, or other appropriate officials or committees of the Iowa Medical Society.

During discussion at the special session of the Executive Council, the provisions of the proposed major medical contract were reviewed, and reference was made to payment for the physician's services which, as stated in the contract, is to be paid on the basis of the physician's "reasonable and necessary" charge. The president of Blue Shield acknowledged that claims would be routinely screened at the $5 unit level, except in communities where it is known that the level is higher for certain procedures.

Several members of the Executive Council indicated it would be desirable to provide the House of Delegates an opportunity to review Blue Shield contracts before they are printed and sold, in the event it is necessary to discuss and clarify certain contract provisions, and it was pointed out that the proper method of study and recommendation would be through the mechanism of the Policy-Evaluation Committee, which would report to the full membership, as well as to the House of Delegates.

Following lengthy consideration of the misunderstanding which had occurred relative to the development and implementation of major medical coverage, the Executive Council unanimously approved the following resolution:

WHEREAS, The Executive Council is aware of the approval and support given by the House of Delegates for the concept of a major medical plan by Blue Shield, and is in accord that such a plan be implemented at an appropriate time, and

WHEREAS, The Executive Council has adopted a motion reiterating action taken by the House of Delegates in April, 1963, that new or modified Blue Shield programs should be presented to the Executive Council or House of Delegates before being placed on sale, and

WHEREAS, The Policy-Evaluation Committee of the Iowa Medical Society has been charged with the responsibility of reporting on all aspects of Blue Shield to the House of Delegates, which will convene in approximately 90 days, therefore be it

Resolved, That the Executive Council take no action on the proposed major medical plan, but recommend that such plan be presented to the Iowa Medical Society Policy-Evaluation Committee for study and inclusion in its over-all report on Blue Shield to the House of Delegates in April, 1964.

On January 26, 1964, the Blue Shield Board of Directors voted to hold in abeyance the sale of the major medical contract until after the 1964 Annual Meeting of the Iowa Medical Society.

As stated repeatedly in meetings with Blue Shield representatives, the Society's position regarding the implementation of the major medical contract—that is, postponing the sale of the contract until after consideration by the House of Delegates—was not meant to be a judgment on the soundness of the proposed program, but, rather, was a postponement in adherence to the mandate of the House of Delegates that all new or altered plans be brought to the Executive Council or to the House of Delegates for approval. As explained, this matter had been considered by the Executive Council, but in view of all the ramifications, the Council had elected to defer to the House of Delegates, and the Board of Trustees strongly concurred in that decision.

IMS Pathology-Blue Shield Study Committee: Last November, the president of the Society received a let-

ter from the president of the Iowa Association of Pathologists inviting the Iowa Medical Society to conduct a thorough study of all relations between pathology and Blue Shield. A committee was appointed, and I'd like its chairman, Dr. C. E. Radcliffe, to present a progress report at this time. A copy of Dr. Radcliffe's report is provided in the packets as an addendum to the Board of Trustees Supplemental Report H.

Meeting with the Insurance Commissioner: At the IMS Policy-Evaluation Committee meeting on January 16, 1964, it was proposed that representatives of Blue Shield and the Society confer with the Insurance Commissioner to elicit from him an interpretation of the phrase "reasonable and necessary charges" as it pertains to the Major Medical contract, as well as a broadening of his interpretation of the phrase "usual and customary" as it exists in the Blue Chip contract.

A joint conference was held on February 3, 1964. Representing the Medical Society were its president, its president-elect, the chairman of its Board of Trustees, and a Society staff member representing the executive director, who was unable to be present because of a conflicting meeting in Washington. Those present at the meeting were most congenial, and your Society representatives came away from the meeting believing that very satisfactory results had been obtained. The consensus of the Medical Society representatives is incorporated in a portion of the Policy-Evaluation Committee Report, published in the March, 1964, issue of the IMS JOURNAL.

It was after the impressions of the Society's representatives had been included in the Policy-Evaluation Committee report that a memorandum was received from the Insurance Commissioner (February 11, 1964), in which he reported his recollections of what had occurred at the conference on February 3. The Insurance Commissioner's report of the meeting is at great variance with the conclusions of the Medical Society representatives, which had been recorded in a memorandum prepared by the Society staff member (February 4, 1964). For your information and study, copies of the memoranda prepared by the Society and the Insurance Commissioner are included in your packets as Exhibits No. 8 and No. 9.

CONCLUSIONS

Based on information provided in this report and on the exhibits which have been included in your packets, it is apparent that the misunderstandings between the Iowa Medical Society and Blue Shield have not been eliminated during the past year, but rather that new ones have been added.

To talk about these misunderstandings serves little purpose. It is clear to the Board of Trustees that the IMS has reached a point in its relations with Blue Shield where if Society sponsorship is to be continued, the Society must enumerate specific guidelines for Blue Shield to follow in its broad relationship to organized medicine in Iowa. We know that members of the Blue Shield Board of Directors are also desirous of knowing specifically what matters should be submitted by Blue Shield to the Society for official consideration.

Therefore, the Board of Trustees enumerates the following situations under which Blue Shield should turn to the Iowa Medical Society for guidance and approval:

1. When new contracts are being considered.
2. When changes or new interpretations of existing contracts are contemplated.
3. When changes are proposed in methods of filing and/or paying claims.
4. When information has come to light concerning practices of individual physicians that are inimical to the welfare of the patient, or abusive to the plan.

It is acknowledged that time and experience will result in refinements to these guidelines, but at least it would appear these will provide a reasonable beginning.

We feel it is important to point out that for over a century the Iowa Medical Society has been generally acknowledged and accepted as the only organization with the authority to speak for the medical profession in Iowa. Therefore, particularly since Blue Shield is held out to the public as a Medical Society sponsored plan, it is absolutely essential that the Iowa Medical Society be provided opportunities to pass judgment on all Blue Shield programs that may effect the practice of medicine—not only involving Blue Shield participating physicians, but non-participating physicians as well, who expect and rely on the IMS to represent their interests. Furthermore, the officers of the Society will utilize every force at their command to protect the responsibility that the Society has assumed to represent and speak for the medical profession, and will discourage and, if necessary, expose, any individual or organization attempting to dilute or circumvent that authority and its accompanying responsibility.

Finally, we believe that adherence to the guidelines we have presented will reestablish a sound working relationship between Blue Shield and the Iowa Medical Society, and will create a climate in which the Society and Blue Shield can concentrate their efforts on improving and promoting the best possible Blue Shield program for the people of Iowa.

In any event the Board of Trustees recommends that a progress report on Iowa Medical Society-Blue Shield relations be presented to the Executive Council no later than November 1, 1964, and if during that period of time it is determined that the Society and Blue Shield cannot establish reasonable working relationships, a special meeting of the House of Delegates be called for the purpose of considering a friendly parting of the ways between the Iowa Medical Society and Blue Shield.

S. P. LEINBACH, M.D., *Chairman*
C. W. SEIBERT, M.D.
J. H. SUNDERBRUCH, M.D.
C. V. EDWARDS, SR., M.D.
O. D. WOLFE, M.D.
OSCAR ALDEN, M.D.
R. F. BIRGE, M.D.
V. L. SCHLASER, M.D.

Addendum to Supplemental Report H: Progress Report of the IMS Pathology-Blue Shield Study Committee

Presented by C. E. Radcliffe, M.D.

(Referred to the Reference Committee on Blue Shield. For final action by the House of Delegates, see the report of the reference committee.)

On November 19, 1963, a letter was sent to the president of the Iowa Medical Society by the Iowa Association of Pathologists inviting the Iowa Medical Society to conduct a complete study of all relations between pathologists and Blue Shield. The pathologists asked that several areas of misunderstanding between their group and Blue Shield be explored impartially by the Iowa Medical Society.

On November 21, the Board of Trustees accepted this proposal and recommended that the president and

the chairman of the Board of Trustees consult and appoint a committee to carry out this project. On December 18, 1963, the Board of Trustees approved appointment of the following special committee: Chairman—C. E. Radcliffe, M.D., the Judicial Council chairman; C. W. Seibert, M.D., a member of the Board of Trustees; A. P. Echternacht, M.D., chairman of the Subcommitte on Medical Practice in Hospitals and Nursing Homes; Fred Sternagel, M.D., chairman of the Relative Value Study Committee; C. N. Hyatt, M.D., member of the Committee on Legislation; and K. H. Strong, M.D., member of the Subcommittee on Public Assistance.

On January 6, 1964, the secretary of the Iowa Medical Society notified members of their appointment, and all members accepted. In the IMS NEWS BULLETIN of January 15, 1964, the IMS membership was apprised of appointments to the IMS Pathology-Blue Shield Study Committee.

The first meeting of this group was held February 16, 1964. At that meeting, the Executive Committee of the Iowa Association of Pathologists appeared. Comprising this committee are: K. R. Cross, M.D., Iowa City, chairman; Jack Layton, M.D., Iowa City; C. B. Preacher, M.D., Davenport; Fred Dick, M.D., Waterloo; and Clarence Denser, M.D., Des Moines.

Many particulars of complaint on behalf of the pathologists were presented to the entire Committee. Copies of the documents presented to the Committee by the Iowa Association of Pathologists were made available to Blue Shield representatives prior to a meeting with them on March 15, 1964. On that occasion, the Committee heard statements from Blue Shield representatives regarding the complaints of the pathologists.

As a result of a Polk County District Court decision on November 28, 1955, and the subsequent passage of House File 21 in Iowa, we have a law which for the first time verifies and stipulates that: (1) a hospital cannot practice medicine in the State of Iowa, (2) an employer-employee relationship between a physician and a hospital is illegal, (3) pathology and radiology are medical services, (4) pathology and radiology are Blue Shield benefits—not Blue Cross, (5) bills for pathology and radiology must be submitted in the name of a physician. This law has been strongly defended and supported in Iowa, and we know from experience that many, if not most, states are in support of the principles established through the court decision and the passage of House File 21. This has caused some misunderstanding, since the fees being paid for in-hospital laboratory and x-ray services were formerly paid entirely out of Blue Cross premium income and not Blue Shield. Since pathology and radiology services are now included as Blue Shield benefits and are therefore properly a part of the Blue Shield premium, a paradoxical misunderstanding has resulted. Some members of the medical profession seem to have the impression that suddenly laboratory and x-ray services are receiving an inordinate number of Blue Shield claim dollars.

Insofar as we know, in the Blue Cross-Blue Shield Plans in all other states, in-hospital pathology and radiology services still remain as Blue Cross benefits—not Blue Shield. We also know that in most states concerted efforts are being made by organized medicine to accomplish what has been done in Iowa—the transfer of these services from the hospital plans (Blue Cross) to the physician plans (Blue Shield). It would be premature to offer an opinion on this question, but it appears that based on the evidence received by the Committee to date, these specialists have reasonable contracts and they are not personally taking advantage of the public, of the hospitals, or of Blue Shield. It is clear that in order to understand what has occurred in the transfer of these medical services from Blue Cross to Blue Shield and its effect on the Blue Shield claim dollar, it must be considered in complete context.

We have been informed that in 1963 approximately 38.7 per cent of the Blue Shield claims dollar was allocated for radiology and pathology services. A further breakdown reveals that 20 per cent of this total constitutes payment for laboratory services. It is the intent of our committee to analyze this 20 per cent of the claim dollar that is being paid for laboratory services, to determine precisely what it represents. Based on this information, we expect to demonstrate what would be involved if pathology services were paid based on the current edition of the Iowa Relative Value Index (Green Book) at a maximum of $5 per unit. When this has been ascertained, we will then be able to determine whether or not this transition is a reasonable one, or that other alternatives should be explored. As you know, it has been recommended by the House of Delegates that all Blue Shield programs be moved into the Green Book as rapidly as feasible.

Investigation by this Committee to date has revealed that for a considerable period of time, tension has been mounting between Blue Shield and individual pathologists, and Blue Shield and the Iowa Association of Pathologists. The Committee is aware of existing personality conflicts, and this fact will be kept uppermost in mind as the Committee continues its deliberations. Our common objective is to search out and determine the cause of the misunderstanding, and then, based on well-supported facts, to propose a reasonable solution.

As mentioned by Doctor Leinbach, the Society has retained a consulting actuary who will advise the Committee in its deliberations. He will be asked to provide an objective analysis of the Iowa problem, and his recommendations will assist the Committee in determining a course of action to propose to the Society.

We ask your indulgence during the period of this study. It is our hope that findings and recommendations will be completed within 60 to 90 days.

As chairman of the Judicial Council of the Iowa Medical Society, and of this Committee, I have been impressed by the dedication of the men who are serving with me in attempting to mediate this extremely complex problem. I feel you should know that even though the Committee is strictly one of the IMS, two members of the group of six are currently members of the Blue Shield Board of Directors, and thus Blue Shield should have reasonable assurance that it is being represented in the deliberations and decisions.

As previously mentioned, this is a progress report, and we ask the House of Delegates to receive it as such.

C. E. RADCLIFFE, M.D., *Chairman*

On behalf of the AMA Educational and Research Foundation, the chairman of the Board of Trustees, Dr. S. P. Leinbach, presented a check in the amount of $12,425.24 to Dr. Robert C. Hardin, dean of the S.U.I. College of Medicine. Dr. Hardin spoke briefly in acknowledgment of the gift.

Dr. George Scanlon, President of the Iowa Medical Foundation, reported on the student loan portion of the organization, as follows:

Total loans entered into since the inception of the program	$242,738.42
Loans repaid	93,022.75
Loans outstanding as of April 22, 1964	149,715.67

One hundred sixty-nine students have participated in the fund; 58 have repaid their loans in full, and there are 111 outstanding.

Supplemental reports from standing and special committees were then requested.

Reports of Standing Committees

NOMINATING COMMITTEE

The following slate will be submitted to the House of Delegates today. Additional nominations will be accepted from the floor, after which the Speaker of the House will declare nominations closed.

President-Elect	L. F. Hill, M.D., Des Moines
	F. G. Ober, M.D., Burlington
Vice President	J. E. Houlahan, M.D., Mason City
	J. J. Redmond, M.D., Cedar Rapids
Trustee	C. W. Seibert, M.D., Waterloo
Speaker of the House	L. J. Halpin, M.D., Cedar Rapids
Vice Speaker of the House	P. M. Kersten, M.D., Fort Dodge
AMA Delegate	L. W. Swanson, M.D., Mason City
AMA Delegate	H. J. Smith, M.D., Des Moines
Councilor—First District	C. L. Kelly, M.D., Charles City
Councilor—Fourth District	W. M. Krigsten, M.D., Sioux City
Councilor—Fifth District	R. L. Wicks, M.D., Boone
Councilor—Sixth District	C. N. Cooper, M.D., Waterloo
Councilor—Eighth District	F. G. Ober, M.D., Burlington
Councilor—Eleventh District	Oscar Alden, M.D., Red Oak
Blue Shield Liaison	R. H. Dorner, M.D., Des Moines
Delegates to Iowa Medical Society (2)	C. P. Hawkins, M.D., Clarion
	R. H. Kuhl, M.D., Creston
	R. C. Larimer, M.D., Sioux City

Respectfully submitted,
V. H. CARSTENSEN, M.D., District 1
L. J. KIRKHAM, M.D., District 2
J. M. RHODES, M.D., District 3
P. M. CMEYLA, M.D., District 4
R. B. STICKLER, M.D., District 5
C. D. ELLYSON, M.D., District 6
J. M. LAYTON, M.D., District 7
J. F. BISHOP, M.D., District 8
F. O. W. VOIGT, M.D., District 9
R. W. BOULDEN, M.D., District 10
J. W. BARNES, M.D., District 11

The report of the Nominating Committee was adopted as presented. Nominations from the floor were requested, and none were presented.

COMMITTEE ON LEGISLATION

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

This report will be very brief but there are two or three items which must be emphasized to the members of the House of Delegates.

First and of major importance is that the House Ways and Means Committee of the U. S. House of Representatives is now in Executive Session considering the King-Anderson Bill and alternative proposals. We are cautiously predicting that any vote on the King-Anderson Bill per se would be in opposition to the principle of financing health care for the aged through the Social Security System. There is, however, the possibility that amendments to the Kerr-Mills Law may be proposed. We must realize that any statement made regarding the final outcome of the hearing is merely conjecture and each of us must continue to do everything within our power both individually and collectively to keep this legislation in Committee. The Committee on Legislation is in close touch with this situation and any significant developments will be immediately reported to the membership.

Secondly, we should like to invite members of this House of Delegates to attend the annual Legislative Contact Man Breakfast which will be held at 7:00 a.m., Tuesday, April 28, 1964, in the Des Moines Room of the Hotel Savery. The Honorable James Bromwell, Congressman from the second Iowa Congressional District, will be the keynote speaker. Tickets are $2.00 each and to aid us in planning, we would suggest that those interested purchase tickets in advance at the Iowa Medical Society Registration Desk at the Hotel Fort Des Moines.

The last item to discuss is perhaps of the most immediate importance. Each of you is aware that the Iowa General Assembly has been reapportioned for election to the next Legislative Session convening in January 1965. Without a doubt, many new faces will be in the Iowa legislative halls. The Iowa Medical Society has been fortunate enough to enjoy good relations with the members of the General Assembly, which have resulted in acceptable health legislation. If these are to be maintained, every physician must do his part and become active in the political party of his choice to assure that those elected to the General Assembly are men and women who will continue to maintain, preserve and enact health legislation to the benefit of all Iowa citizens.

In concluding this report and with the above fresh in mind, I would like to ask the privilege of this House to introduce R. C. Brown, M.D., of Mason City, chairman of the Iowa Physicians Political League for a few brief remarks.

Respectfully submitted,
H. E. WICHERN, M.D., *Chairman*

Dr. R. C. Brown, chairman of the Iowa Physicians Political League, then presented a report on the League.

NECROLOGY COMMITTEE

(The Speaker asked the members of the House of Delegates to rise during the reading of the names of members of the IMS who had died during 1963. The list appears on page 383 of this issue of the JOURNAL.)

COMMITTEE ON ARTICLES OF INCORPORATION AND BY-LAWS

(Referred to the Reference Committee on Articles of Incorporation and By-Laws. For final action by the House of Delegates, see the report of the reference committee.)

The Committee on Articles of Incorporation and By-Laws has considered and approved a proposed amendment to the By-Laws which emanated from an *ad hoc* committee of the Judicial Council, appointed to revise the rules of the Grievance Committee. The proposed amendment would delete paragraph 3, Chapter V, Section 14 of the By-Laws, viz.:

No member of the Grievance Committee may participate in deliberation of questions concerning the conduct of a physician residing in the jurisdiction of that Committee member's Council District.

This proposed amendment of the Judicial Council has the blessing of the chairman and secretary of the Grievance Committee. The logic for proposing the amendment is explained in the following paragraph:

"The *ad hoc* Committee and the Grievance Committee officers were unable to see that the representative of a defendant's councilor district should be excluded from Grievance Committee hearings, unless he requests to be excluded. They commented that in actions before the boards of censors of county medical societies, all the board members are the defendant's neighbors, and also that the By-Laws of the Iowa Medical Society do not require that the councilor from the defendant's district be excluded from hearings held before the Judicial Council."

To fulfill the request of the Judicial Council, the following resolution is presented for your consideration:

"*Resolved,* That the By-Laws of Iowa Medical Society as amended, be and hereby are amended by deleting from Chapter V, Section 14 thereof, the whole of the third paragraph.
"*Be It Further Resolved,* That the chairman of the Board of Trustees and the secretary of Iowa Medical Society be and they hereby are authorized and directed to sign, acknowledge and publish the foregoing amendment as the Ninth Amendment to the By-Laws of Iowa Medical Society, as amended, and to do all other things required by law or otherwise to execute, complete and place in lawful effect such amendment."

L. J. O'BRIEN, M.D., *Chairman*
E. G. KETTELKAMP, M.D.
R. A. DORNER, M.D.
L. R. FULLER, M.D.
D. A. HOWELL, M.D.

COMMITTEE ON MEDICAL SERVICE

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

The 1963 House of Delegates directed several resolutions to the Committee on Medical Service for study and report. Two resolutions regarding the individual responsibility plan were re-referred to the IMS Plan and Scope Committee which also has had under consideration the usual and customary fee concept. Action on these resolutions can be found in the Supplemental Report of the IMS Plan and Scope Committee.

The next resolution reviewed by the Committee was introduced in 1963 by the Scott County Medical Society and concerned a deductible and co-insurance proposal. The Committee agreed that the intent of the resolution would require that all programs offered by Blue Cross-Blue Shield include a deductible and/or co-insurance feature. In reviewing the resolution, the Committee looked with question on some of the policy requirements as embodied in points two and three of the "resolved" portion of the resolution. The requirement that a subscriber must satisfy the deductible amount before Blue Cross-Blue Shield can make payment seems to be impractical to police and administer. It was also noted that the House of Delegates endorsed in theory the principle of co-insurance and/or deductible in combination as a measure to reduce abuses of over-utilization. The Committee agrees with this endorsement.

The Committee feels that the currently-proposed Blue Cross-Blue Shield Major Medical Program, if approved by the House of Delegates, perhaps could satisfy many of the requirements in the Scott County resolution, but realizes that a major medical proposal is a supplement to basic coverage and would not be effective until the benefits under the basic contract are satisfied. The medical profession—state and national—for several years had advocated a deductible and/or co-insurance approach to, in part, control the ever-increasing cost of health insurance. Labor groups are negotiating for fringe benefits under which the employer pays the total cost of health insurance or prepayment program. In the view of the Committee, the general public has not yet been sold on the deductible and/or co-insurance approach to lessening the cost of health insurance premiums, as has been true in the automobile insurance field.

The public also seems to confuse the "insurance" concept for health costs and the "prepayment" of health costs. It would appear that quite often the public considers health insurance programs as a matter of prepayment rather than the usual concept of insuring against loss.

The Committee does not feel that you can make people buy what they do not want. However, if deductible and co-insurance is a feasible mechanism for controlling costs, the first step in proving this concept would be to sell the members of the medical profession and paramedical groups on this approach. If these organizations test this concept and determine it to be a proper means of controlling cost and satisfactory in protecting individuals against large financial loss for health expenses, then this should be a selling point for underwriting other groups.

The Committee on Medical Service recommends approving in principle the sentiment of resolution 15 as proposed by the Scott County Medical Society in 1963 and further recommends that the House of Delegates approve in principle the sale of Blue Cross-Blue Shield to physician groups and other paramedical groups and their employees only contracts that include a deductible and/or co-insurance feature as approved by the House of Delegates.

The Committee's HANDBOOK report outlines briefly the utilization survey of Iowa hospitals conducted in 1963 by the Committee on Medical Service. The chairman of the Committee recently appeared before the IMS Executive Council and recommended that the Iowa Hospital Association be contacted to determine if it was still interested in the joint utilization survey, originally proposed in 1962 which was to be conducted under the auspices of the Iowa Medical Society and the Iowa Hospital Association. The Committee recommended that a utilization study evaluating actual practices in representative hospitals as selected by the IMS and IHA, chosen by a preferred random sampling from the records of these hospitals, be studied by an IHA auditor for the hospital portion of the charges and a medical evaluation of the identical cases be carried out either by a physician paid for his services or by a panel of physicians selected by the Iowa Medical Society. The combined facts of the study would be reported, without identification, to the Board of Trustees of the IMS and the Board of Directors of the IHA for their recommendations. The Committee outlined to the Executive Council several reasons for this approach: (1) the just-completed hospital utilization committee survey has failed to develop any usable information; (2) the IMS must explore this problem in sufficient depth to determine where problems actually exist before some other organization conducts such a study without adequate medical supervision and completely apart from organized medicine; (3) the

medical profession must look beyond the costs of physicians' services only, as it is and will be blamed for all costs, whether they be hospital, drugs or other related expenses; and (4) an active, working hospital utilization committee can be the most effective of weapons in fighting off patient pressure for continued hospitalization. The pressure can be transferred by the individual physician to the utilization committee.

The Executive Council approved the recommendation of the Committee and we have since learned that the Iowa Hospital Association is still eager to cooperate with the IMS on such a joint committee to study hospital costs, medical costs and the utilization thereof. A meeting will be held as soon as feasible to formulate an exact program for presentation to the Boards of Trustees of the respective organizations for financial authorization to carry out the project.

The Executive Council requested that an educational and progress report regarding the matter be presented to the House of Delegates. The Chairman of the Committee on Medical Service will be present at the reference committee hearing to answer any questions that may be raised regarding the proposed program.

G. G. YOUNG, M.D., *Chairman*

SUBCOMMITTEE ON MATERNAL AND CHILD HEALTH

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

As mentioned in the HANDBOOK Report, the Subcommittee has been considering the subject of protective glasses for public school children participating in courses such as vocational shops, industrial arts, or laboratories. During the past few weeks, the Subcommittee has corresponded with numerous organizations —both public and private—to solicit comments regarding the advisability of such a proposal.

Among the organizations expressing interest and supporting this type of legislation are the Iowa Society for the Prevention of Blindness, the Iowa Commission for the Blind, the State Department of Public Instruction, the State Department of Health, the Iowa Congress of Parents and Teachers, Inc., and the Association for the Education of Visually Handicapped Children, along with many others. The States of Ohio and Massachusetts have passed legislation in this field.

It is regrettable that legislation may ultimately be necessary to enforce proper rules and regulations for eye safety and other areas of safety. The Committee is aware that certain local school districts with the encouragement of the members of the medical profession, have voluntarily instituted programs to require pupils and teachers to wear industrial quality eye protective glasses when in chemistry or physics laboratories or industrial arts and vocational shops. We commend them for this action and encourage the members of the Iowa Medical Society to consider this problem in their local school district.

The Subcommittee has been impressed with the enthusiastic support for this proposal shown by the organizations contacted. It is therefore the recommendation of the Subcommittee on Maternal and Child Health that the Iowa Medical Society endorse and encourage voluntary programs sponsored at the local level by the medical profession and responsible school authorities to require pupils and teachers to wear eye-protective devices when participating in certain vocational and industrial arts classes as well as in chemistry and physics laboratories. It further recommends that the Iowa Medical Society support in principle the enactment of proper legislation formulated to accomplish the above-stated purpose through a properly drawn and properly administered statute which could result in a constructive and worthwhile law.

J. J. SPEVAK, M.D., *Chairman*

SUBCOMMITTEE ON MEDICAL ASSISTANCE TO THE AGED

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

At the inception of the Medical Assistance to the Aged Program in Iowa, the president of the Iowa Medical Society appointed a new committee to represent the Society in negotiations and liaison with the Board of Social Welfare in matters pertaining to MAA. The committee appointed is a blending of those physicians who represented the Society on the Kerr-Mills Advisory Council and physicians who serve on the Subcommittee on Public Assistance and are thereby familiar with this general type of program.

Only one meeting has been held with the Board of Social Welfare. It was soon after implementation of MAA, and not enough experience was available to form conclusions or make any long-range predictions.

The primary purpose of this report is to impress upon the House of Delegates that the Society is well aware of problems in the MAA program and is preparing to negotiate them with the Board of Social Welfare as soon as practicable. The main areas of concern are well known and they include: (1) The fact that the county ranges of fees do not always represent the usual charges in the respective areas, (2) The formula for payment of mileage is unrealistic, and (3) Payment of anesthesia on a time rather than procedural basis departs from the customary in this state.

This Committee, as the representative of the Iowa Medical Society in dealings with the Board of Social Welfare, welcomes the comments and suggestions of all physicians. The only way in which we can be effective in your behalf is to be aware of problem areas and to have sufficient facts to justify proposals for corrective measures.

W. J. MORRISSEY, M.D., *Chairman*

OSTEOPATHIC COMMITTEE AND MD SECTION OF MD/DO LIAISON COMMITTEE

(Referred to the Reference Committee on Miscellaneous Business. For final action by the House of Delegates, see the report of the reference committee.

This report is submitted to bring the House of Delegates up to date on the evaluation and enrollment program. It should be read in conjunction with the HANDBOOK report of these committees.

The status of the evaluation and enrollment program as of April 26, 1964, is as follows:

Applicants approved by respective county medical societies and IMS Judicial Council	113
Applicants approved by respective county medical societies but not yet considered by IMS Judicial Council	2
Applicants disapproved by respective county	

medical societies and notified of this action by IMS Judicial Council	15
Applicants with applications not yet acted upon by respective county medical societies	32
Total applicants to date	162

Of the 15 applicants disapproved by respective county medical societies, 7 have appealed and have had hearings before the MD/DO Liaison Committee (composed of 5 M.D.'s and 5 D.O.'s). In these hearings it is emphasized that the program is an entirely voluntary one, that it involves ethics, not legal rights, that whatever cooperation is achieved between the two professions must be accomplished at the local level and cannot be dictated by a state committee. It seems fair to say that the hearings have improved understanding of the program, have mollified resentments of both professions and have impressed applicants with the standards of the medical profession, even though definitive action on the appeal is seldom recommended.

It is apparent that the meaning of the evaluation and enrollment program is not clear to some county medical societies. Reduced to its simplest terms, the program is an effort to determine whether or not an applicant osteopathic physician and surgeon is a "cultist" or whether he limits his practice to scientific medicine. Manipulative treatment, per se, is not cultism, but manipulation for bizarre, unrelated anatomical and and physiological abnormalities is certainly suspect. High ethical standards and reasonable competence are logical criteria to be included in evaluation. Participation in the program is voluntary both for the osteopathic physician and surgeon and the county medical society. Approval of a applicant does not make professional relations mandatory between M.D.'s and individual doctors of osteopathic medicine and surgery; it merely makes them ethical, if mutually agreeable.

What is the significance of the program? What long range results can be expected? In the developmental stages, your Committees envisioned the program as a sincere attempt to find out if the better-trained osteopaths in Iowa were "cultists" and to evaluate further the competency and ethics of their practice. The osteopathic profession accepted the program as an aid to freer consultation with medical doctors and M.D. specialists. Two unexpected and significant results of the program should be mentioned; one is the desire of the State University of Iowa College of Medicine to invite approved osteopathic physicians and surgeons to postgraduate courses. The Osteopathic Committee, on July 25, 1963, discussed this question in detail and recommended to the IMS Judicial Council that the SUI College of Medicine invite those osteopathic physicians and surgeons approved under the evaluation program to attend postgraduate courses with the reservation that co-sponsoring organizations be consulted prior to mailing the invitations. The Judicial Council, on August 28, 1963, considered the question and agreed that "whom the College should invite is a question for the Dean and the faculty to decide (with the approval of co-sponsoring organizations, if any)." The Council further conveyed to Dean Hardin that it felt the IMS could have no objection to the presence at those meetings of approved osteopathic physicians and surgeons.

After additional consideration of the issue from both the legal and ethical standpoints, the IMS Judicial Council, on March 19, 1964, came to the conclusion that co-sponsoring organizations, such as the Iowa Chapter of the AAGP, and other specialty groups, "should be asked to raise no objections to the College's inviting approved osteopathic physicians and surgeons to any meetings other than those restricted strictly to members of their respective organizations." The Judicial Council further asked the Osteopathic Committee to recommend this in its supplemental report to the House of Delegates and, in addition, to send the recommendation to the Iowa Chapter of the AAGP and the specialty societies in individual letters. On April 9, 1964, the Osteopathic Committee reviewed its previous actions and made the following observations:

1. The Committee had already gone on record as favoring invitation of approved osteopathic physicians and surgeons to the postgraduate courses and had asked only that the College of Medicine "consult" not "gain approval of" co-sponsoring organizations before issuing invitations.

2. The recommendations of the Osteopathic Committee and IMS Judicial Council are not binding on SUI College of Medicine.

3. Since this is a matter of ethics, it would seem proper for the Judicial Council to notify those organizations that it is not unethical for M.D.'s to associate with approved osteopathic physicians and surgeons at medical meetings.

For these reasons the Osteopathic Committee considered it inadvisable to take any further action, but went on record as hopefully relying on the College of Medicine to act in the best interest of the medical profession and the health of the people of Iowa. The M.D. section of the Liaison Committee requested that the Iowa Society of Osteopathic Physicians and Surgeons use its influence to prevent unapproved and unqualified members from attempting to attend SUI College of Medicine postgraduate courses.

A second result of the program had been the requests from several private hospital staffs regarding the ethics of staff membership for an approved osteopathic physician and surgeon. Based on information compiled by the committees, the following statements can be made regarding this question:

1. It is not unethical for doctors of medicine to associate professionally (on a voluntary basis) with approved osteopathic physicians and surgeons on the staff of a private hospital.

2. Accreditation of a hospital by the Joint Commission is not withdrawn because of staff membership by an osteopath, provided his hospital practice is under the general supervision of the medical staff.

3. The evaluation program with attainment of approved listing conveys no legal or other rights to staff membership in a private hospital.

What about the long-range results of the evaluation program? If the chairman may be permitted a philosophical note, he should like to say that the overall "success" of the program, if this may be measured by the ratio of approved to disapproved applications (see "box score"), is amazing. Certainly there are "islands" of opposition, resentment, misunderstanding and downright hostility to the program. But they *are* islands. When one considers that the osteopathic profession has, in fact, divided itself to participate in the program (only osteopathic physicians and surgeons being eligible, not straight osteopathic physicians who compose the majority); that the osteopathic profession, realizing the need for upgrading their postgraduate education, has encouraged well over 100 osteopathic physicians to take a lengthy postgraduate course on weekends to qualify for the osteopathic physician and surgeon li-

cense; that the osteopathic profession has supported the medical profession in urging passage of the Composite Board Bill, which abolished the Board of Osteopathic Examiners and established a Board of Medical Examiners which examines candidates for both professions in identical tests, has strong disciplinary and enforcement powers and will have power to approve osteopathic colleges and internships after July 1, 1968; when one considers that a considerable number of Iowa citizens must rely on osteopaths for their medical care, which most assuredly will be upgraded by a freer consultation with M.D.'s—for these reasons and others, one cannot help feeling that the evaluation program and the work of these committees have been of some value.

Your committees again wish to thank Mr. Eldon Huston, staff secretary, for his efficient service and helpful suggestions. Mr. Robert Throckmorton, IMS legal counsel until his elevation to General Counsel of the AMA in May, 1963, was a pillar of strength and lucidity in the formulation and shepherding of the Composite Board Bill and, happily, was not taken from us until its enactment into law. His services to these committees and the IMS as a whole will be sorely missed.

J. M. RHODES, M.D., *Chairman*

COMMITTEE ON BLOOD BANKING

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

The lawsuit brought against the Commissioner of Insurance for the State of Iowa by the Blood Service Plan Insurance Company of Phoenix, Arizona, owing to the Commissioner's refusal to issue it a license to write policies insuring individuals specifically against the use of blood, was terminated following passage of a legislative bill, S. F. 443, by the Iowa General Assembly. This bill amended a section in the Code of Iowa (515.48 Code 1962) dealing with health insurance to state—"but such benefits shall not include the furnishing or replacing in kind of whole human blood or blood products of any kind."

Following this action, the appeal to the Supreme Court by the Attorney General was dismissed, apparently on the basis that the insurance company's original application to do business in Iowa was illegal in view of the recently enacted legislation (S. F. 443), and the company would have to reapply for admission. Since repeated attempts by the company's local legal counsel to get in touch with company representatives have been unsuccessful, it appears they are no longer interested in doing business in Iowa. There can be little doubt that if this effort of an out-of-state company specifically insuring against blood use had been successful, blood banking programs in Iowa would have been jeopardized. Much credit should be given to the Iowa Medical Society and its counsel who worked successfully for passage of Senate File No. 443.

The Board of Trustees of the Iowa Medical Society made the following request of the Committee on Blood Banking: "It would be desirable to have set out in writing an explanation of all the steps involved in the blood banking operation, in order that all interested parties may be in agreement as to the basic facts." The Committee on Blood Banking responded by preparing the following "Outline of Blood Banking."

The term "Blood Bank," as defined by the American Association of Blood Banks (AABB), means "a medical facility designed, equipped and staffed to procure, draw, process, store and distribute human whole blood or its derivatives." A complete blood bank program would also include all of the steps preliminary to the transfusion of the recipient.

The AABB brochure, "Standards for a Blood Transfusion Service," states that "all phases of selection of blood donors and collection, processing and transfusion of blood shall be the responsibility of a qualified licensed physician." At the 1963 Clinical Session of the American Medical Association which was held in Portland, Oregon, December 1-5, the AMA House of Delegates adopted the following statement presented by the Reference Committee on Legislation and Public Relations:

"Your Committee is of the opinion that since the transfusion of blood constitutes the transplant of human tissue physicians responsible for transfusions render a medical *service* to the patient. The moral and legal obligations of the physician require that he be responsible for the selection of the donor, the drawing of the blood, its processing and storage, the delivery, the type and crossmatch, and the administration of the transfusion and the evaluation of its effect. Each of these steps intimately involves medical judgment, and each requires constant medical supervision."

There are several varieties of blood banks:

1. *Hospital Blood Banks.* These are operated in hospitals by the clinical pathology service primarily to meet their own needs, but sometimes to supply other facilities.

2. *Community Blood Banks.* These usually are non-profit facilities locally organized and controlled to serve the needs of a majority of all the hospitals in a community or geographic area. A community blood bank may provide all of the services, including the crossmatching and other preliminary steps immediately prior to transfusion to the recipient, or it may only supply the blood to the facility using it.

3. *Red Cross Blood Program.* These are non-profit community or regional blood banks which perform the collection, processing and distribution of blood. They are partially subsidized by money from the American Red Cross, but also collect a participation fee from the hospitals which utilize their services. The participation fee is intended partially to defray the cost of collection and processing of the blood unit.

4. *Other Blood Programs,* such as privately owned blood banks operated for profit.

A blood banking program includes all the steps required, from procurement of blood from a donor to administration of blood to a recipient.

1. Donors may be obtained through (a) voluntary replacement by friends or relatives, (b) advance individual donation blood assurance programs (donor clubs), (c) community quota blood assurance programs (Red Cross), and (d) professional donors. Replacement procurement often begins at the bedside in the recruiting of friends or relatives. Blood banks vary greatly in their relative utilization of these donor sources.

2. Processing of blood and storage begins after donation. The properly identified blood is immediately stored in a refrigerator at a temperature designed for maximum length of life of erythrocytes. At a convenient time after donation or when otherwise necessary, the blood is further identified and labeled as to blood group and Rh type; in some installations the presence of immune antibodies and/or the isoagglutinin titer of group O blood is determined. Rh negative bloods are

tested for antibodies. Serologic tests for syphilis and tests to rule out liver disease are performed. Hemoglobin content and hematocrit are determined. Packed cells and fresh frozen plasma may be made from some of the blood. In most banks the blood withdrawal and processing procedures are performed either by registered MT (ASCP) technologists or by trained nurses, following procedures which meet standard requirements of the AABB, National Institutes of Health (NIH), and the American Red Cross. Medical supervision by a pathologist or other qualified physician is required by all three of these organizations.

3. Blood must be inspected by qualified personnel prior to transport and after arrival at its destination. The method of transport is also under medical control. Inspection at the destination includes a check of the temperature and the tamper proof seal, and also includes observation and notation of the proper appearance of the blood and plasma components in the unit. Re-issuance of returned blood is determined by the medical director when all of the above criteria are satisfied.

4. The service to the recipient also includes storage of donor blood as well as grouping, typing of recipient blood and compatibility testing between donor and recipient. Retyping of the donor blood is required for maximum patient protection by the AABB whenever the procuring and the transfusing facilities are different organizations. In addition to the serologic identification of the blood, many hospitals have added the standard procedure of screening for antibodies in the recipient's blood. Patients acquire antibodies from previous transfusions and from a variety of different disease entities involving the recticuloendothelial system. The compatibility procedure requires a minimum of two different tests as an optimal precaution.

The medical director maintains liaison with the nursing service regarding release of blood. He may establish contact with the recipient's physician regarding the type of blood or blood products indicated for the patient. After the blood has been selected and released from the blood bank refrigerator, the nurse, physician, and hospital assume additional responsibility for the welfare of the recipient and the proper care of the blood. Supplementary materials needed at the bedside of the actual transfusion are usually obtained from the Central Supply of the hospital.

Post-transfusion response is also evaluated by medical consultants. Labeling, clerical work, grouping and compatibility tests of donor and recipient are rechecked under medical direction. Post-transfusion studies may require bacteriological examination of the donor blood and studies of urine, serum and plasma samples from the recipient.

The transfusion service fee to the patient includes costs in all phases of blood banking, from the initial search for donors to the final conclusion of the transfusion, with one exception—there is no charge for the cost of blood itself. There are appropriate supplementary charges arising out of materials and service provided by the hospital. The transfusion service fee, therefore, recognizes that every step in the blood banking process is undertaken with the ultimate goal of providing the recipient with the best and safest transfusion. The cost of each step accrues to the recipient, because every step in the blood banking process is for the benefit of the recipient.

The AABB believes the individual has a responsibility to replace the blood used by procuring donors—friends or relatives—or by paying a replacement fee. Most banks would rather have blood replacements, reserving the professional donor for emergencies and when a rare blood type is required. If a blood bank has a ready access to donors, it will place less emphasis on blood replacement and may operate on a one-for-one replacement policy (one unit replaced for one unit used), while blood banks experiencing more difficulty in procurement of blood donors and/or blood loss through outdating may find a two-for-one replacement policy necessary.

The American Association of Blood Banks and the American Red Cross have agreed that it is not desirable for the cost of blood (replacement fee) to be paid by insurance programs, since this eliminates the motivation for volunteer donations jeopardizing the supply of blood. The Iowa Association of Blood Banks endorses this point of view.

Competent medical personnel in our blood banks must constantly keep abreast of latest developments through their professional organizations, periodicals and educational meetings in order to provide transfusion services of unsurpassed excellence.

Next we wish to report briefly on a hearing by a Federal Commission which has widespread implications for all physicians. A hearing on Federal Trade Commission (FTC) charges that commercial blood banks had been boycotted by hospitals backing a non-profit community blood bank in Kansas City, Missouri, began in May, 1963, and was concluded in September, 1963. Two basic issues appeared to be involved: Was there a proved boycott of commercial blood banks by hospitals and physicians backing the non-profit community blood bank, and, further, should blood for the sick be permitted in any case to be a product in trade, bartered for profit?

The opinion of the 15 defendent physicians in the case was that blood should not be bartered, but should come primarily from the relatives, friends, and other voluntary groups that non-profit community blood banks recruit for supplying their member hospitals. The FTC contended that blood in part has long been an article of interstate commerce, and that hospital refusals to accept direct deliveries from the commercial blood bank in Kansas City were in violation of the Fair Trade rules. As of this date the case is still in litigation, and a decision from the hearing examiner is not expected until sometime in May, 1964.

In order to win its case, the FTC will have to have proved its charges that the FTC has jurisdiction over non-profit community entities, such as the community blood bank; that blood is an item of "commerce" in the legal sense; and that an actual conspiracy took place. U. S. Senator Edward V. Long, of Missouri, among others, has proposed legislation providing that the refusal of non-profit blood banks and of physicians to obtain blood and blood products from other blood banks shall not be deemed to be acts in restraint of trade under laws of the United States.

The AMA House of Delegates at its 1963 Interim Session in Portland, Oregon, took note of this situation and adopted the following resolution:

WHEREAS, H. R. 8426 of the 88th Congress of the United States would provide that a refusal of non-profit blood banks and of physicians to obtain blood and blood plasma from other blood banks shall not be deemed to be acts in restraint of trade under the laws of the United States; and

WHEREAS, Non-profit blood banks by procuring blood and blood plasma from volunteer donors and scientifically processing such materials for human use, provide an essential part of medical care in the United States; and

WHEREAS, Physicians who are skilled in clinical pathology

and hematology voluntarily and without compensation work in and direct the technical operation of such non-profit blood banks; and

WHEREAS, These physicians are usually members of their county, state and national medical associations and their respective specialty societies; therefore be it

Resolved, By the House of Delegates of the American Medical Association that it favors enactment of legislation by the Congress of the United States, for the intent and purpose for which H. R. 8426 provides; and be it further

Resolved, That, at the appropriate time, the position of the American Medical Association on H. R. 8426, 88th Congress, be made known to the members of the Congress and to other interested parties; and be it further

Resolved, That a representative of the American Medical Association appear before any committee of the House of Representatives or Senate to which this resolution or a similar resolution may be referred, and to urge its enactment by the Congress of the United States with the recommendation that "hospitals" be included with "non-profit blood banks and physicians."

The Committee on Blood Banking recommends that the Iowa Medical Society consider, endorse, and approve this resolution, and notify the American Medical Association of its action.

H. R. 9238, which declares certain acts of non-profit blood banks and physicians as not constituting acts in restraint of trade under laws of the United States, incorporates the substance of H. R. 8426; and, in addition, H. R. 9238 declares as not constituting acts in restraint of trade any other activity of a non-profit blood bank relating to donor procurement, drawing of blood, processing, storing, or transfusing of blood as a medical service. This bill was introduced after physicians were subjected to charges of restraint of trade where they refused to obtain or accept blood from commercial blood banks. The refusal to use blood from commercial blood banks stemmed from an increased incidence of serum hepatitis attributed to the blood received from such commercial blood banks.

The AMA Committee on Blood has reviewed H. R. 9238 and urges active and vigorous support of the bill. The Committee on Blood Banking urges the Iowa Medical Society to support H. R. 9238 actively and vigorously.

The House of Delegates of the American Medical Association at its 1963 Interim Session in Portland, Oregon, adopted the following statement:

AMA POSITION STATEMENT ON BLOOD BANKS

"In recent years there has been a dramatic growth of blood banking facilities in the United States. The procurement of human blood and its transfusion to patients are medical procedures which require the direction and supervision of a physician. The ultimate objective of these procedures is the welfare of persons who require blood or blood derivatives. The medical profession has primary responsibility for the care and treatment of patients and, therefore, has a paramount interest in evaluating facilities and procedures for blood procurement, storage and use. This responsibility can best be discharged by medical societies at the local level.

"The American Medical Association's Committee on Blood believes that component and constituent medical societies should be informed of proposed and existing blood banking services within the community and should offer guidance to them. In the opinion of the Committee it is highly essential that the organization of new blood banking programs and the modification of existing ones should have, in the interest of public health and safety, the approval of the county or district medical society and, therefore, should be coordinated with existing approved blood banking facilities; *that since a blood bank can well be considered a medical facility, the overall director—the top authority in a blood bank should be a doctor of medicine.*"

The Committee on Blood Banking recommends that the Iowa Medical Society endorse and affirm this action of the House of Delegates of the American Medical Association.

J. M. LAYTON, M.D., *Chairman*

POLICY-EVALUATION COMMITTEE

(Referred to the Reference Committee on Blue Shield. For final action by House of Delegates, see the report of the reference committee.)

The majority report of the Policy-Evaluation Committee as published in the March, 1964 JOURNAL OF THE IOWA MEDICAL SOCIETY includes two addenda concerning the Federal Employees Program. Additional information has come to the attention of the Policy-Evaluation Committee regarding the Federal Employees Program and this is being transmitted to the House of Delegates for its information.

Early in March, 1964, Iowa Medical Service was notified by the Civil Service Commission of:

1. A provision for a twelve-month extension of time for a plan that is endeavoring to reach the new income levels ($7,500 full service family) but will require more time than the period between now and November 1, 1964.

2. A provision for continuation of the $4,000 single-$6,000 family levels in an area where the plan can demonstrate to the Commission's satisfaction that its present income levels are providing service benefits to at least three-fourths of the Federal employees in its area.

These two new provisions, as adopted by the Civil Service Commission, allow a Blue Shield Plan an additional twelve-month period for the approval of a $7,500 family service income contract or enable a plan to continue the $6,000 family service program if it can demonstrate that the present program is providing full service benefits to at least three-fourths (75 per cent) of the recipients.

Iowa Medical Service indicates that the present $6,000 family service income Federal Employees Program does meet the second requirement in that it is paying charges in full in 75 per cent of the doctor service reports under the present high-level contract.

W. L. DOWNING, M.D., *Chairman*

COMMITTEE ON SCIENTIFIC EXHIBITS

(Referred to the Reference Committee on Miscellaneous Business. For final action by the House of Delegates, see the report of the reference committee.)

It has become increasingly evident over the past few years that interest in the scientific exhibits on the part of both the exhibitors and the members of the Iowa Medical Society has been waning. The reward to the exhibitor for the work that goes into the preparation of an exhibit has just not justified the effort. The space for the exhibits is poor, being in an area that is out of the way and requires an effort to reach. Even when we had adequate space at the Auditorium, interest in the exhibits was slight, so that space is not the whole problem. Many of the exhibits are not scientific at all, but are promotional booths for various paramedical organizations.

For all of these reasons the Committee on Scientific Exhibits recommends to the House of Delegates that

the scientific exhibits at the annual meetings of the Iowa Medical Society be discontinued.

JAMES T. MCMILLAN, M.D., *Chairman*

PLAN AND SCOPE COMMITTEE

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

This Committee reviewed resolutions submitted to the House of Delegates in 1963 from the Pocahontas and Fayette County Medical Societies on the subject of Individual Responsibility. The Pocahontas County resolution (No. 1) included the following "resolves":

Resolved, That the Iowa Medical Society reappraise its policy regarding third party intervention between the doctor and the patient, and adopt and implement the philosophy of individual responsibility between these two parties, and be it further

Resolved, That the Iowa Medical Society press for abolishment of the vendor concept in favor of the recipient concept in all government medical programs, and be it further

Resolved, That the Iowa Medical Society take steps to formulate a working plan incorporating standardized forms to implement a statewide Individual Responsibility Plan.

The Fayette County resolution (No. 10) included the following "resolve":

Resolved, That the Fayette County Medical Society approves and supports the resolution of the Pocahontas County Medical Society, which was introduced as Resolution No. 21 at the Annual Meeting of the IMS in May, 1962, calling for the adoption of a state-wide individual responsibility plan, with the abolition of the vendor concept in all government programs.

The House of Delegates in 1963 requested that the aforementioned resolutions be referred to the Committee on Prepayment Medical Care for study and report to the House of Delegates in 1964. However, following a consultation between the chairman of the Prepayment Committee (now called Committee on Medical Service) and the Board of Trustees, it was agreed these resolutions should be referred to this Committee since this Committee was responsible for developing the IMS concept of usual and customary fees for all third party medical plans—governmental and private.

Incidentally, the Committee's statement on the usual and customary fee concept as approved by the IMS Executive Council appears in the 1964 edition of the House of Delegates' HANDBOOK.

After having studied Resolutions No. 1 and No. 10 on the subject of Individual Responsibility, the Committee agreed that the House of Delegates should be informed that although the representative from the Pocahontas County Medical Society has been researching this subject, he has not had opportunity to formulate a specific educational program; further, that the House of Delegates be asked to approve a recommendation that an appropriate educational program for Iowa physicians regarding individual responsibility be developed by the IMS, in cooperation with the sponsors of Resolutions No. 1 and No. 10.

G. H. SCANLON, M.D., *Chairman*

Resolutions

CARROLL COUNTY MEDICAL SOCIETY

NO. 1. BLUE SHIELD

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That Blue Shield be requested to adopt and provide a contract encompassing normal, customary, and reasonable fees for professional services, and be it further

Resolved, That all other contracts in Blue Shield be changed as soon as possible to be included within this one contract, and be it further

Resolved, That determination of normal, customary, and reasonable fees be made at the county level, and be it further

Resolved, That if necessary for premium costs, deductible and co-insurance features be included within this one policy.

FAYETTE COUNTY MEDICAL SOCIETY

NO. 2. FEDERAL SUBSIDIZATION* OF THE BLUE CROSS-BLUE SHIELD PROGRAMS

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Governmental control of the medical profession, because it would be lay control of a highly complex and esoteric discipline, could not but destroy the sanctity of the doctor-patient relationship and lower the quality of medical care; and

WHEREAS, There are strong political factions attempting to gain governmental control of the medical profession for political advantage; and

WHEREAS, Governmental control of the financial aspects of the medical profession would require governmental regulatory control over all aspects of the medical profession; and

WHEREAS, Blue Cross and Blue Shield are established and accepted financial programs, meeting some of the financial aspects of the medical profession; and

WHEREAS, Subsidization of the Blue Cross and Blue Shield programs with government-raised tax monies would be a most logical first step to the gradual absorption of these financial programs within the realm of government, ultimately gained through the simple mechanism of gradually increasing the percentage of the subsidy, thereby eliminating all competing private insurance programs attempting to meet medical costs, leaving the government as the sole provider of finances required by the medical profession; and

WHEREAS, Open overtures have already been made to propagate and promulgate this idea of governmental subsidization of the Blue Cross-Blue Shield programs; therefore be it

Resolved, That the medical profession, because of its fundamental principles, must strongly oppose this idea of governmental subsidization of the Blue Cross-Blue Shield programs, and must refuse to support or utilize these programs if either accepts governmental subsidy, and be it finally

Resolved, That this resolution be presented by the IMS delegates to the House of Delegates of the AMA for its approval at the time of the annual meeting of the AMA, in San Francisco, in June, 1964.

FAYETTE COUNTY MEDICAL SOCIETY

NO 3. EXPLORATION OF THE DEDUCTIBLE PRINCIPLE IN THE INSURANCE FINANCING OF MEDICAL CARE

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Medical technology has produced, and is producing, great advances in applicable medical science; and

WHEREAS, These advances, because they make possible the procurement of human health that is unattainable without them, are rightly held to be necessities by those in their need; and

WHEREAS, The complexities of many of these advances makes their cost, to some, prohibitive; and

WHEREAS, Medical insurance is proving to be a proper economic mechanism, in our free society, for the meeting of these occasional, large medical costs; and

WHEREAS, The insurance principle of first dollar coverage is fraught with the unsolvable problems of public overutilization and politically corrupt professional policing; therefore be it

Resolved, That the medical profession, in meeting its total medical responsibility to the public, initiate and back a full exploration of the deductible and co-insurance principles in the health insurance field, utilizing the actuarial facilities of the Blue Cross and Blue Shield programs which have en-

* Federal subsidization herein implies the use of public tax monies for the purchase of Blue Cross and/or Blue Shield contracts for the general public, or a segment thereof. It does not imply the "fringe benefit" purchase of such contracts for federal employees; as such "fringe benefits" are, in reality a form of income, not a subsidy.

joyed the privilege of being backed and sponsored by the medical profession, and be it finally

Resolved, That this resolution be presented by the IMS delegates to the House of Delegates of the AMA, for its approval at the time of the annual meeting of the AMA, in San Francisco, in June, 1964.

JEFFERSON COUNTY MEDICAL SOCIETY

NO. 4. FEDERAL SUBSIDIZATION* OF THE BLUE CROSS-BLUE SHIELD PROGRAMS

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Governmental control of the medical profession, because it would be lay control of a highly complex and esoteric discipline, could not but destroy the sanctity of the doctor-patient relationship and lower the quality of medical care; and

WHEREAS, There are strong political factions attempting to gain governmental control of the medical profession for political advantage; and

WHEREAS, Governmental control of the financial aspects of the medical profession would require governmental regulatory control over all aspects of the medical profession; and

WHEREAS, Blue Cross and Blue Shield are established and accepted financial programs, meeting some of the financial aspects of the medical profession; and

WHEREAS, Subsidization of the Blue Cross and Blue Shield programs with government-raised tax monies would be a most logical first step to the gradual absorption of the financial programs within the realm of government, ultimately gained through the simple mechanism of gradually increasing the percentage of the subsidy, thereby eliminating all competing private insurance programs attempting to meet medical costs, leaving the government as the sole provider of finances required by the medical profession; and

WHEREAS, Open overtures have already been made to propagate and promulgate this idea of governmental subsidization of the Blue Cross-Blue Shield programs; therefore be it

Resolved, That the medical profession, because of its fundamental principles, must strongly oppose this idea of governmental subsidization of the Blue Cross-Blue Shield programs, and must refuse to support or utilize these programs if either accepts governmental subsidy, and be it finally

Resolved, That this resolution be presented by the IMS delegates to the House of Delegates of the AMA, for its approval at the time of the annual meeting of the AMA, in San Francisco, in June, 1964.

JEFFERSON COUNTY MEDICAL SOCIETY

NO 5. EXPLORATION OF THE DEDUCTIBLE PRINCIPLE IN THE INSURANCE FINANCING OF MEDICAL CARE

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Medical technology has produced, and is producing, great advances in applicable medical science; and

WHEREAS, These advances, because they make possible the procurement of human health that is unattainable without them, are rightly held to be necessities by those in their need; and

WHEREAS, The complexities of many of these advances makes their cost, to some, prohibitive; and

WHEREAS, Medical insurance is proving to be a proper economic mechanism, in our free society, for the meeting of these occasional, large medical costs; and

WHEREAS, The insurance principle of first dollar coverage is fraught with the unsolvable problems of public overutilization and politically corrupt professional policing; therefore be it

Resolved, That the medical profession, in meeting its total medical responsibility to the public, initiate and back a full exploration of the deductible principle in the health insurance field, utilizing the actuarial facilities of the Blue Cross and Blue Shield programs which have enjoyed the privilege of being backed and sponsored by the medical profession, and be it finally

Resolved, That this resolution be presented by the IMS delegates to the House of Delegates of the AMA, for its approval at the time of the annual meeting of the AMA, in San Francisco, in June, 1964.

* Federal subsidization herein implies the use of public tax monies for the purchase of Blue Cross and/or Blue Shield contracts for the general public, or a segment thereof. It does not imply the "fringe benefit" purchase of such contracts for federal employees; as such "fringe benefits" are, in reality, a form of income, not a subsidy.

WOODBURY COUNTY MEDICAL SOCIETY

NO. 6. RESOLUTIONS CONCERNING BLUE SHIELD

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

A. WHEREAS, The Iowa Medical Society is on record as opposed to fixed fee schedules, be it

Resolved, That the Blue Chip contract be discontinued, since it in fact constitutes a fixed fee schedule.

B. WHEREAS, The Iowa Medical Society opposes a fixed fee schedule

Resolved, That it offer no opposition to a high income service contract as long as it does not fix fees.

C. WHEREAS, One physician working with another physician in the concurrent care of a patient may receive nothing from Blue Shield for his services if the other physician has submitted his statement and his fee has been paid, be it

Resolved, That no Blue Shield payments be made for care until 30 days after the patient has been discharged from the hospital or that Blue Shield devise other means to assure all physicians' statements have been received and considered.

D. WHEREAS, Many patients are admitted to the hospital for diagnostic studies, including x-ray and laboratory, thus increasing the cost of insurance by adding the cost of hospitalization, be it

Resolved, That an XL diagnostic contract be implemented, paying for out-patient service.

E. WHEREAS, The A-250 is inadequate and embodies practically all the inequities in the Blue Shield contracts, be it

Resolved, That this contract not be sold after a certain date, and that that date be as early as is practical to implement removing this contract from sale.

F. WHEREAS, Great confusion results from the various Blue Shield fee books, be it

Resolved, That all contracts be adapted with the appropriate unit fee index to the Iowa Relative Value Index book.

G. WHEREAS, There are inequities in all of the Blue Shield contracts as regards payment for medical services, and whereas progress has been made in coding and describing these services, be it

Resolved, That Blue Shield thoroughly study and continue its efforts to correct these inequities.

CASS COUNTY MEDICAL SOCIETY

NO. 7. DATE OF ANNUAL BLUE SHIELD MEETING

(Referred to the Reference Committee on Reports of Officers for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The annual physicians' Blue Shield meeting and the annual IMS meeting are held at different times, and

WHEREAS, It would seem expedient for a majority of those attending both meetings, to attend them during the same time period, be it

Resolved, That the annual Blue Shield physicians' meeting be held concurrently with the time set for the annual meeting of the IMS.

WEBSTER COUNTY MEDICAL SOCIETY

NO. 8. DEDUCTIBLE AND COINSURANCE FEATURES IN BLUE SHIELD POLICIES

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Iowa Medical Society request the Iowa Blue Shield organization to incorporate "deductible and coinsurance" features in all its policies sold in the state of Iowa, as has been requested repeatedly in the past.

WEBSTER COUNTY MEDICAL SOCIETY

NO. 9. A BLUE SHIELD POLICY PAYING USUAL AND CUSTOMARY FEES

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That Blue Shield offer for general sale in Iowa, at least one Blue Shield policy which will pay "the usual and customary fee" to the physician, without reference to a fee schedule or to "unit value," other than the ranges of fees for services as determined by periodic surveys of doctors in various counties in the state.

WEBSTER COUNTY MEDICAL SOCIETY

NO. 10. BLUE SHIELD FULL-SERVICE POLICIES LIMITED TO LOW INCOME GROUP

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Iowa Medical Society request the Iowa Blue Shield organization to sell one and only one "full service policy," and that this include reasonable fee allowances, and that it be limited in its full service feature to families having a total income equivalent to $3,600 per year.

BLACK HAWK COUNTY MEDICAL SOCIETY

NO. 11. OPPOSITION TO BLUE SHIELD FULL-SERVICE POLICIES FOR HIGH-INCOME GROUPS

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Iowa Medical Society is opposed to any further increases in the Blue Shield full coverage income level above those already approved by the House of Delegates as of the time of the annual meeting in April, 1963.

BLACK HAWK COUNTY MEDICAL SOCIETY

NO. 12. REAFFIRMATION OF REQUIREMENTS THAT BLUE SHIELD CONTRACTS RECEIVE APPROVAL FROM HOUSE OF DELEGATES

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Be It Reaffirmed, That the House of Delegates of the Iowa Medical Society must approve any new Blue Shield contract, and this approval must be obtained before it is offered to the public in any manner.

SCOTT COUNTY MEDICAL SOCIETY

NO. 13. ENDORSEMENT OF DR. WARD'S CANDIDACY FOR THE AMA PRESIDENCY

(Unanimously adopted by the House of Delegates without referral to a reference committee.)

WHEREAS, Dr. Donovan Ward is representative of the medical practitioner of Iowa and the United States, and

WHEREAS, Dr. Donovan Ward has been very active in organized medicine especially as a delegate to the American Medical Association from Iowa and as vice-president of the American Medical Association, and

WHEREAS, The Iowa Medical Society should be proud to present and support Dr. Donovan Ward's candidacy for president-elect of the American Medical Association, be it therefore

Resolved, That the members of the Iowa Medical Society wholeheartedly endorse Dr. Donovan Ward's candidacy for president-elect of the American Medical Association, and give their greatest support to his candidacy.

SCOTT COUNTY MEDICAL SOCIETY

NO. 14. THANKS TO IMS STAFF

(Referred to the Reference Committee on Reports of Officers for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Mr. Donald L. Taylor and the staff of the IMS have performed their duties with the greatest fervor and unselfishness, and

WHEREAS, Don and the staff have at all times been most loyal and dedicated, be it therefore

Resolved, That the delegates at this 1964 House of Delegates Meeting of the Iowa Medical Society extend their heartfelt thanks to Don Taylor and the staff for their services.

CERRO GORDO COUNTY MEDICAL SOCIETY

NO. 15. IMS DUES

(Referred to the Reference Committee on Reports of Officers for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Medical Society (IMS) has represented the physicians of Iowa for over 100 years,

WHEREAS, The requests of the members have increased greatly over the past 15 years, and the office facilities of the IMS are rapidly becoming inadequate to handle the needs of the members,

WHEREAS, The expenses of the IMS JOURNAL have increased greatly due to a loss in advertising revenue, and

WHEREAS, The annual dues of the membership have not kept pace with expenses of the society, therefore be it

Resolved, That the Iowa Medical Society dues be raised to a total of $125.00 per year.

DUBUQUE COUNTY MEDICAL SOCIETY

NO. 16. CANDIDACY OF DR. DONOVAN WARD FOR PRESIDENT-ELECT OF THE AMA

(Unanimously adopted by the House of Delegates without referral to a reference committee.)

WHEREAS, The Executive Council of the Iowa Medical Society has unanimously proposed that Donovan F. Ward, M.D., be nominated for the office of president-elect of the American Medical Association at its annual meeting in San Francisco in June, 1964; and

WHEREAS, Donovan F. Ward, M.D., was elected to the office of vice-president in June 1963 by acclamation and simultaniously an ex officio member of the Board of Trustees of the American Medical Association; and

WHEREAS, The House of Delegates of the Iowa Medical Society has elected him for the past ten years as delegate to the American Medical Association; and

WHEREAS, As delegate and elected officer of the American Medical Association, he has demonstrated abilities of leadership; and

WHEREAS, The Dubuque County Medical Society desires to enhance this candidacy by a unanimous vote of its members in token of their esteem; therefore be it

Resolved, That the House of Delegates of the Iowa Medical Society act as a committee of the whole and endorse the candidacy of Donovan F. Ward, M.D., by vote without reference to a committee; and be it further

Resolved, That the notice of this action be sent to the delegates and alternate delegates of the American Medical Association, to the president and secretary of each state association and to each executive secretary.

MARION COUNTY MEDICAL SOCIETY

NO. 17. WITHDRAWN BY ITS SPONSORS

FIFTH COUNCILOR DISTRICT CAUCUS

NO. 18. IOWA MEDICAL SOCIETY OFFICE BUILDING

(Referred to the Reference Committee on Reports of Officers for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Medical Society office should be near facilities that increase efficiency such as hotel, restaurant, convention, and transportation, and

WHEREAS, Iowa Medical Society headquarters should be convenient to allied health agencies, insurance companies, and state agencies, and

WHEREAS, It would seem difficult to be certain of long range needs of the Society and the problems of trying to build the proper single purpose building would distract staff from more important problems, and

WHEREAS, Satisfactory space in a new building in an ideal location can be available at less cost and with fewer problems than owning a single purpose building, therefore be it

Resolved, That Iowa Medical Society authorize its officers to negotiate for such space and, upon completion of a satisfactory lease, sell its other real estate holdings.

DALLAS-GUTHRIE COUNTY MEDICAL SOCIETY

NO. 19. IOWA MEDICAL SOCIETY REDISTRICTING

(Referred to the Reference Committee on Articles of Incorporation and By-Laws for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Articles of Incorporation and By-Laws of the Iowa Medical Society be amended to form a new councilor district made up of Polk and Warren counties. The remaining counties of the present district would remain as the Fifth Councilor District.

DALLAS-GUTHRIE COUNTY MEDICAL SOCIETY

NO. 20. IOWA MEDICAL SOCIETY REDISTRICTING

(Referred to the Reference Committee on Articles of Incorporation and By-Laws for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Articles of Incorporation and By-Laws of the Iowa Medical Society be amended to form two new councilor districts, the first made up of Polk and Warren counties and the second made up of Linn and Johnson counties. The remaining counties of the present districts would remain as the respective Fifth and Seventh Councilor Districts.

DALLAS-GUTHRIE COUNTY MEDICAL SOCIETY

NO. 21. DRUG DISPENSING BY PHYSICIANS

(Referred to the Judicial Council acting as a reference committee, for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That any doctor of medicine shall have the right of choice to prescribe or dispense drugs. Any and all state and federal agencies shall abide by this inalienable right and shall not discriminate against any doctor in his free choice or impose any limitation as to his usual and just charges for the same; and be it further

Resolved, That the Iowa Medical Society shall appoint an appropriate enforcing body to insure compliance with the previously stated rights; and be it further

Resolved, That the first order of business for the said body shall be to correct the previously existing discrepancies in the OAA drug alowances as set by the pharmacists, as compared to those of dispensing physicians.

UNION-TAYLOR COUNTY MEDICAL SOCIETY

NO. 22. REVISION OF THE MAA FEE SCHEDULES

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The original fee schedules for the Iowa MAA program were instituted with known errors being present, and

WHEREAS, It was initially intended that the fee schedule would be reviewed and revised at the end of a six-month period, be it

Resolved, That the present fee schedule for the MAA program in Iowa be reviewed as previously agreed at the end of the first six-month period and a new revised schedule of usual and customary fees of 1964 be compiled by each county society and accepted as the fee schedule for the MAA program in Iowa.

POTTAWATTAMIE COUNTY MEDICAL SOCIETY

NO. 23. COMPULSORY IMMUNIZATION FOR SCHOOL CHILDREN

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The present immunization program for school children has been only partially successful at the best efforts of the Pottawattamie County Medical Society, cooperating with the PTA and other lay groups, and it is evident that other measures must be taken, and

WHEREAS, It is also evident that the failure of this program is due not to financial inability to make it successful but the apathy and lack of understanding of the necessity for this program, and

WHEREAS, A compulsory program at state level in other states, namely by Illinois, New York and Pennsylvania has apparently been the solution to this program; be it therefore

Resolved, That the Pottawattamie County Medical Society respectfully requests the Iowa Medical Society, through proper channels, to ask the General Assembly of Iowa to pass legislation requiring "compulsory immunization and physical examination before being entered in any school system and compulsory immunizations and periodic health examinations at such time intervals as deemed necessary during the years of school attendance." The age at which this compulsory program shall terminate would be determined at the state level.

DECATUR COUNTY MEDICAL SOCIETY

NO. 24. BOARDS OF TRUSTEES OF COUNTY HOSPITALS

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Section 347.9 of the Iowa Code of 1962 states that physicians and licensed practitioners cannot be elected to the boards of trustees of county hospitals, and

WHEREAS, Under the present law the board of trustees must be composed of people who have no medical background to assist them, and

WHEREAS, The general efficiency of the board of trustees would be improved by the election of one member who has had scientific training, be it therefore

Resolved, That Section 347.9 of the Iowa Code of 1962 be amended in the following manner: by the deletion of "None of whom shall be a physician or licensed practitioner," and insertion of "one of whom may be a Doctor of Medicine, osteopath, nurse or pharmacist."

JOHNSON COUNTY MEDICAL SOCIETY

NO. 25. BLUE SHIELD CO-INSURANCE PROPOSAL

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Blue Shield is universally recognized as the "Doctors' Plan," and

WHEREAS, We, the Johnson County Medical Society, believe that *all* patients should have a personal interest in every dollar of their medical care bill, therefore be it

Resolved, That the House of Delegates require that all present Blue Shield policies be gradually converted to a co-insurance plan; and be it further

Resolved, That all future Blue Shield policies have co-insurance as an integral part of the policy.

JOHNSON COUNTY MEDICAL SOCIETY

NO. 26. BLUE SHIELD-BLUE CHIP PLAN

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Blue Chip full service policy of the Iowa Medical Service has been sold for seven years, and

WHEREAS, Experience has shown that there are a very large number of controversies with participating physicians, chiefly concerning the definition of proper fees for full service, and

WHEREAS, The full service clause in this contract unjustly discriminates against some participating physicians; therefore be it

Resolved, That the Iowa Medical Society request the withdrawal of the Blue Chip policy immediately and that those policies now in force be converted to other policies not having the full-service provision as soon as possible.

SCOTT COUNTY MEDICAL SOCIETY

NO. 27. IOWA MEDICAL SOCIETY NOMINATING COMMITTEE PROCEDURE

(Referred to the Reference Committee on Articles of Incorporation and By-Laws for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Chapter IV, Sec. 2, of the By-Laws, as amended, having to do with election of officers, requires that the Nominating "Committee shall report its official ticket containing two or more candidates for each office to be filled at the annual meeting, except as provided in Section 3"; and

WHEREAS, Upon occasion the district caucuses do not submit a sufficient number of recommended candidates to permit compliance with this provision; therefore be it

Resolved, That Section 3, Chapter IV, be redesignated Section 3 a. and that the following be designated Section 3 b: The requirement that the Nominating Committee submit two or more candidates for each office may be waived for any office by unanimous consent of the Nominating Committee when the District Caucuses have, singly and collectively, submitted less than two names.

SCOTT COUNTY MEDICAL SOCIETY

NO. 28. CORPORATE PRACTICE OF MEDICINE

(Referred to the Judicial Council acting as a reference committee for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, It is illegal in the state of Iowa for a corporation to practice medicine, and

WHEREAS, Except for those physicians in graduate training programs, the employment under any guise of physicians by hospitals constitutes the practice of medicine by these hospitals, and

WHEREAS, The ethical principles of the American Medical Association and the Iowa Medical Society indicate that the division of a medical fee between physicians and hospitals is strictly unethical, and all contractual arrangements between physicians and hospitals depend upon the bargaining ability of the parties involved, and both physicians and hospitals will be subject to economic or political pressures unrelated to the professional care of patients, and

WHEREAS, There exist in the state of Iowa contractual arrangements between physicians and hospitals which constitute both the illegal and unethical practice of medicine; therefore be it

Resolved, That the Iowa Medical Society enforce the ethical principles of the American Medical Association and the Iowa Medical Society, and the law of the state of Iowa, and require all physicians practicing in the state of Iowa, except those in graduate training programs, to render, and submit a charge for their professional services on a "fee-for-service" basis.

MONTGOMERY COUNTY MEDICAL SOCIETY

NO. 29. BLUE SHIELD BALLOTING PROCEDURES

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Blue Shield Board of Directors has the power of making nominations, which tends towards self-perpetuation of the Board, and

WHEREAS, Prior to 1958, Blue Shield members, while assembled at the annual meeting, had opportunity to nominate from the floor opposition candidates for the Blue Shield Board of Directors, and

WHEREAS, This procedure was changed in 1957 by amendment of the By-Laws of Iowa Medical Service so that candidates are now elected by mail ballot and the nomination of opposition candidates has become virtually impossible, and

WHEREAS, These mail ballots, received by members, seldom present a choice of candidates so that in disgust many have termed them "Russian ballots," and

WHEREAS, It would serve the best interests of Blue Shield to amend its By-Laws to provide for an improved system of balloting, be it

Resolved, That this House of Delegates recommends to Blue Shield that it amend its By-Laws to provide a choice of candidates for each vacancy by leaving an appropriate space for a write-in preference for each position on the ballot.

GREENE COUNTY MEDICAL SOCIETY

NO. 30. BOARD OF TRUSTEES COMMENDATION

(Referred to the Reference Committee on Reports of Officers for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Board of Trustees of the Iowa Medical Society has more than fulfilled the mandates of the House of Delegates to meet with the Blue Shield Board and attempt to resolve problems of communications and other matters; and

WHEREAS, In addition to the Iowa Medical Society-Blue Shield Board Meetings, there have been numerous other meetings, such as the 16 district meetings at which members of the Board were speakers, and much time and considerable personal expenditures have been given freely by the members of the Board; therefore be it

Resolved, That this House of Delegates express appreciation to the Board for their selfless service in the best interests of all concerned.

DECATUR COUNTY MEDICAL SOCIETY

NO. 31. PROPOSED HYPHENATION OF DECATUR-RINGGOLD COUNTY MEDICAL SOCIETY

(Referred to the Judicial Council acting as a reference committee, for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Decatur County Medical Society has agreed to the hyphenation of Decatur-Ringgold County Medical Society, and

WHEREAS, Ringgold County Medical Society has agreed to the hyphenation of Decatur-Ringgold County Medical Society, and

WHEREAS, The Councilor of the area has agreed that this would be in the interest of organized medicine in the Councilor District, therefore be it

Resolved, That the House of Delegates of the Iowa Medical Society meeting in annual session in April, 1964, approve the hyphenation of Decatur-Ringgold County Medical Society with the understanding that each Society maintains its separate representation, but that they intend to meet as a single society and should the future develop that either society increases in size, they may wish to return to separate societies.

RINGGOLD COUNTY MEDICAL SOCIETY

NO. 32. PROPOSED HYPHENATION OF DECATUR-RINGGOLD COUNTY MEDICAL SOCIETY

(Referred to the Judicial Council acting as a reference committee, for study and recommendation. For final action by the House of Delegates see the report of the reference committee.)

WHEREAS, Decatur County Medical Society has agreed to the hyphenation of Decatur-Ringgold County Medical Society, and

WHEREAS, Ringgold County Medical Society has agreed to the hyphenation of Decatur-Ringgold County Medical Society, and

WHEREAS, The Councilor of the area has agreed that this would be in the interest of organized medicine in the Councilor District, therefore be it

Resolved, That the House of Delegates of the Iowa Medical Society meeting in annual session in April, 1964, approve the hyphenation of Decatur-Ringgold Medical Society with the understanding that each Society maintains its separate representation, but that they intend to meet as a single society; and should the future develop that either society increases in size, they may wish to return to separate societies.

LEE COUNTY MEDICAL SOCIETY

NO. 33. BLUE SHIELD, BLUE CHIP AND MAJOR MEDICAL

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Medical Society Policy-Evaluation Committee majority report recommends that the Blue Chip con-

tract of Blue Shield be maintained, and that continuing efforts be made to convince the Blue Shield Board of Directors that a program which pays *the* physician his usual, customary, reasonable fee is in the best interest of the recipient, the physician and Blue Shield; and

WHEREAS, The Insurance Commissioner of Iowa has indicated, without committing himself, that the "first step in altering the administration of the present Blue Chip program would be to convince the Blue Shield Board of Directors that such a change would be prudent"; and

WHEREAS, It is widely known that the Blue Chip policy has not been sold and administered on the basis of paying the physician his usual and customary fees as originally explained to and approved by the Iowa Medical Society House of Delegates; and

WHEREAS, Blue Shield is now asking that this House of Delegates approve the sale of major medical contracts and payment of *the* doctor's "reasonable and necessary charges" as a vital part of this contract; and

WHEREAS, Unless Blue Shield can be convinced of the prudence of converting the Blue Chip policy to its original concept, again, as approved by the House of Delegates of payment of the doctor's usual, customary and reasonable fees, it is difficult to understand how the "reasonable and necessary charges" fee concept of the proposed major medical contract will be administered by Blue Shield, accepted and/or interpreted by the Insurance Commissioner and approved by this House of Delegates; therefore be it

Resolved, That the Iowa Medical Society reaffirm its support of the original concept of the Blue Chip policy in that this contract pay the doctor his usual, customary and reasonable fee; and be it further

Resolved, That the proposed major medical contract of Blue Shield with its concept of payment of *the* doctor's "reasonable and necessary charges" be heartily approved by this House of Delegates provided:

(1) That positive, documented assurance is given to this House of Delegates and/or the Iowa Medical Society Executive Council by the Blue Shield Board that it agrees that the original concept of the usual and customary fee of the Blue Chip policy is acceptable to the Board and that the Blue Shield Board recommends to the Insurance Commissioner that all past, present and future Blue Chip contracts be administered and sold on the basis of the usual and customary fee concept.

(2) That the Insurance Commissioner indicates either in person and/or in writing to this House of Delegates and/or the Iowa Medical Society that the original concept of the usual, customary and reasonable fee in the Blue Chip program is acceptable to him, legally and otherwise.

(3) That the definition of the words "the reasonable and necessary charges" of the physician in the major medical contract be so defined in this contract as to make it clear that the fees paid by Blue Shield will actually be *the* doctor's usual, reasonable and necessary charges as interpreted on the basis of ranges of fees within a County or group of Counties subject to adjudication by County Medical Society and/or Iowa Medical Society Review Committees in compliance with requests for said adjudication from Blue Shield.

(4) That the Insurance Commissioner of the State of Iowa indicate as a matter of record before this House of Delegates in person or in writing to the Officers of the Iowa Medical Society in advance of the sale of the major medical contract that the above or very similar definition of "reasonable and necessary charges" is acceptable, legally, to him.

POLK COUNTY MEDICAL SOCIETY

NO. 34. MENTAL HEALTH FACILITIES

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Legislature recently passed legislation to qualify the State of Iowa for federal construction grants made available under Public Law 88-164, and

WHEREAS, These grants administered through the State Department of Health are for the construction of facilities for the mentally retarded and community mental health centers, and

WHEREAS, The medical profession must be represented adequately in the planning and programs stemming from this legislation, and

WHEREAS, The Iowa Mental Health Authority is presently developing a Comprehensive Mental Health Plan for Community Health Centers for the State of Iowa, and

WHEREAS, The Board of Control is presently developing a Comprehensive Plan for the Mentally Retarded, therefore be it

Resolved, That the Iowa Medical Society recommend to the State Department of Health that funds not be disbursed in Iowa under this new legislation until completion and review of these plans, and be it further

Resolved, That in keeping within the context, meaning and purpose of the federal act to provide these funds for decentralized psychiatric care, it is recommended that funds allocated under this act be utilized for construction of psychiatric facilities within local communities, based on local community needs and planning, rather than extension of new or existing state-controlled facilities.

BOONE COUNTY MEDICAL SOCIETY

NO. 35. MAA COUNTY RANGES OF FEES

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, After the completion of the contract with the Welfare Board for the MAA program it was announced in the press that usual and customary fees would be paid for medical services, and

WHEREAS, The fee schedule given the Welfare Board was not the current schedule in Boone and other counties, but one of much earlier vintage and

WHEREAS, This is an injustice to the physicians involved and confusing to the public; therefore be it

Resolved, The Iowa Medical Society immediately survey the various county societies for an up to date fee schedule for their records and renegotiate a new schedule with the Welfare Board at the earliest possible time.

FAYETTE COUNTY MEDICAL SOCIETY

NO. 36. OPPOSITION TO THE NATIONALIZATION OF MEDICINE

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, the House of Delegates of the American Medical Association in June, 1963, called for a re-evaluation of its previous endorsement of "bricks-and-mortar" federal aid, and

WHEREAS, Evaluation of the Public Health Service Act (1944) and subsequent additions and amendments thereto—beginning with Hill-Burton Act of 1946 and continuing through the present Harris proposals (H. R. 10041 and H. R. 10042)—lends credence to the opinion that all these acts are part of a steadily evolving plan to accomplish the Nationalization of Medicine attempted earlier by the discredited Wagner-Murray-Dingell bills, and

WHEREAS, The ruling of the United States Fourth Circuit Court held that acceptance of Hill-Burton funds by private hospitals puts such hospitals into a Federal-State pubilc health program and makes them a part of "State action"; therefore be it

Resolved, That the House of Delegates of the Iowa Medical Society urgently call upon the House of Delegates of the American Medical Association to thoroughly re-evaluate its conflicting stands regarding federal aid and to come out with a statement based on principle in strict opposition to all proposals which may lead to the Nationalization of Medicine, regardless of the route such proposals may take.

CARROLL COUNTY MEDICAL SOCIETY

NO. 37. PHYSICIAN-PHARMACY RELATIONS

(Referred to the Judicial Council acting as a reference committee, for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, By the Carroll County Medical Society that it is ethical for physicians to invest their money in a pharmacy, or lease space in a clinic building to a pharmacist, or dispense drugs provided there is free choice in selection of pharmacy, and provided there is no exploitation of the patient; and be it further

Resolved, That this resolution be presented to the Judicial Council and the Committee on Interprofessional Activities of the Iowa Medical Society for their advisement.

DUBUQUE COUNTY MEDICAL SOCIETY

NO. 38. BLUE SHIELD-BLUE CHIP

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The original concept of Blue Shield has gradually changed from one of payment for medical services for those

in the lower income groups to one whereby nearly everyone may come under their coverage, and

WHEREAS, The so-called epitome is embodied in the Blue Chip policy, whose benefits are relatively fixed and inelastic, regardless of the policy holders ability to pay, and

WHEREAS, The commercial insurance companies are now issuing health and accident policies comparable to Blue Shield —a situation which did not exist at the time of inception of Blue Shield, and

WHEREAS, Participating physicians are having increasing problems in adjudicating claims with Blue Shield, therefore

Be It Resolved, That the Dubuque County Medical Society request the Iowa Medical Society to instruct the members of the board (i.e. the board members who are members of the State Society) of Blue Shield immediately to vote for the elimination of the Blue Chip policy, and further

Be It Resolved, That the Iowa Medical Society take steps toward the gradual and ultimate discontinuance of participation in the management of any health and accident insurance company by any of its members.

LIFE AND ASSOCIATE MEMBERSHIPS

LIFE MEMBERSHIP RECOMMENDED ON THE BASIS OF 50 YEARS' PRACTICE AND 30 YEARS' MEMBERSHIP

County	*Name*
Fayette	Loraine W. Ward, Oelwein
Ida	Merrill W. Grubb, Galva
Jasper	John W. Billingsley, Newton
Linn	Edward M. Victorine, Cedar Rapids
Marshall	Frederick L. Wahrer, Marshalltown
Polk	John Connell, Des Moines
	Grace O. Doane, Des Moines
	Albert E. Johann, Des Moines
Pottawattamie	Harold B. Moorehead, Underwood
Scott	Walter E. Foley, Sr., Davenport
	George W. Cusick, Davenport

ASSOCIATE MEMBERSHIP RECOMMENDED ON THE BASIS OF RETIREMENT OR INCAPACITATION

County	*Name*
Dickinson	Walter R. Fieseler, Okoboji
	Phillip A. Scott, Spirit Lake
Linn	Barclay J. Moon, Cedar Rapids
	J. Norman Bickert, Cedar Rapids
Polk	Paul E. Gibson, Des Moines

It was announced that reference committees would begin their hearings at 2:30 p.m.

Reference committee chairmen were invited to meet with the speaker immediately following adjournment of the House to receive their final instructions.

Delegates were informed that the House of Delegates would convene Wednesday morning, April 29, at 8:00 a.m., in the Grand Ballroom of the Savery Hotel. They were asked to report promptly.

The House was adjourned at 1:15 p.m.

WEDNESDAY SESSION, APRIL 29, 1964

The Wednesday session of the House of Delegates was called to order at 8:15 a.m. The House approved the taking of attendance by registration cards. There were 107 delegates, 9 voting alternates and 15 ex-officio members present.

County	*Delegate*	*Alternate*
Adair		
Adams		
Allamakee		
Appanoose	E. A. Larsen	
Audubon		
Benton	J. E. Blumgren	
Black Hawk	R. C. Miller	
	F. G. Loomis	
	G. D. Phelps	
	A. M. Dolan	
	C. D. Ellyson	
Boone	E. E. Linder	
Bremer		
Buchanan	P. J. Leehey	
Buena Vista		
Butler		
Calhoun	C. R. Wilson	
Carroll	P. T. Cawley	
Cass	J. D. Weresh	
Cedar		
Cerro Gordo	G. J. Sartor	
	J. F. Paulson	
		W. N. Hanson
Cherokee		
Chickasaw	D. L. Trefz	
Clarke	G. I. Armitage	
Clay		
Clayton		
Clinton	M. E. Barrent	
	W. H. Ash	
Crawford		
Dallas-Guthrie	W. A. Castles	
	R. J. Peterson	
Davis	J. R. Scheibe	
Decatur	E. E. Gamet	
Delaware		R. E. Clark
Des Moines	F. G. Ober	
	J. L. Saar	
Dickinson	R. J. Coble	
Dubuque	D. F. Ward	
	K. K. Hazlet	
	D. A. Howell	
Emmet		
Fayette	R. S. Jaggard	
Floyd	R. M. Nielsen	
Franklin	R. E. Munns	
Fremont		
Greene		
Grundy	E. A. Reedholm	
Hamilton	G. A. Paschal	
Hancock-Winnebago		
Hardin	John Sear	
Harrison	J. W. Barnes	
Henry	R. S. Wettach	
Howard	F. L. Klingle	
Humboldt	Beryl Michaelson	
Ida		J. B. Dressler
Iowa	D. F. Miller	
Jackson		
Jasper	J. W. Billingsley	
Jefferson	K. H. Strong	
Johnson	K. R. Cross	
	C. R. Eicher	
	C. P. Goplerud	
		C. E. Radcliffe
	K. J. Judiesch	
	J. M. Layton	
	Jack Moyers	
	C. E. Schrock	
Jones	L. D. Caraway	
Keokuk		
Kossuth	R. E. Jongewaard	
Lee	L. C. Pumphrey	
		J. W. Saar
Linn	J. J. Redmond	
	R. M. Chapman	
	J. J. Keith	
	H. R. Hirleman	
	W. J. Robb	
Louisa		
Lucas	T. C. White	
Lyon		
Madison	J. E. Evans	
Mahaska	G. W. Bennett	
Marion	G. K. Van Zee	
Marshall	R. G. Robinson	
	L. O. Goodman	
Mills		
Mitchell		
Monona		
Monroe		
Montgomery	Oscar Alden	
Muscatine	C. P. Phillips	
O'Brien		I. E. Brown
Osceola		
Page	G. H. Powers	
Palo Alto	G. H. Keeney	
Plymouth	J. P. Trotzig	
Pocahontas	C. J. Smith	
Polk	A. N. Smith	
	R. B. Stickler	
	P. K. Hughes	
	J. T. McMillan	
	J. H. Kelley	
	B. M. Merkel	
	H. E. Wichern	
	N. W. Irving, Jr.	
	E. T. Burke	
		John Hess, Jr.
	V. L. Schlaser	
		A. H. Downing
	S. J. Zoeckler	
Pottawattamie	C. V. Edwards, Jr.	
	F. E. Marsh, Jr.	
	I. J. Hanssmann	
Poweshiek	J. C. De Meulenaere	
Ringgold	D. E. Mitchell	
Sac	C. D. Gibson	
Scott	Erling Larson	
	W. S. Pheteplace	

County	*Delegate*	*Alternate*
	J. F. Bishop	
	W. D. Edgerton	
Shelby	G. E. Larson	
Sioux	M. O. Larson	
Story	G. E. Montgomery	
	J. D. Conner	
Tama		
Union-Taylor	R. W. Boulden	
	R. H. Kuhl	
Van Buren		
Wapello	K. E. Lister	
	E. W. Ebinger	
Warren	Amalgamated With Polk County	
Washington		
Wayne	C. N. Hyatt	
Webster	J. R. Kersten	
	J. F. Kelly	
Winneshiek		D. W. Wright
Woodbury	P. M. Cmeyla	
	H. E. Rudersdorf	
	D. B. Blume	
	C. L. Beye	
	M. A. Blackstone	
Worth	B. H. Osten	
Wright		

LIAISON DELEGATE
C. P. Hawkins

OFFICERS PRESENT AS EX-OFFICIO MEMBERS OF THE HOUSE

C. V. Edwards, Sr.	J. H. Sunderbruch	E. M. Smith
O. D. Wolfe	W. M. Krigsten	R. C. Hardin
R. F. Birge	L. W. Swanson	G. H. Scanlon
S. P. Leinbach	H. J. Smith	Fred Sternagel
C. W. Seibert	L. J. Halpin	W. D. Abbott

Minutes of the April 26 meeting of the House of Delegates were read and approved. Dr. C. P. Hawkins, of Clarion, asked that his name be removed from the list of nominees for Blue Shield Liaison Delegates. The election of officers followed, and the following physicians were chosen:

President-elect	F. G. Ober, M.D., Burlington
Vice-president	J. J. Redmond, M.D., Cedar Rapids
Trustee	C. W. Seibert, M.D., Waterloo
Speaker of the House	L. J. Halpin, M.D., Cedar Rapids
Vice-Speaker of the House	P. M. Kersten, M.D., Fort Dodge
AMA Delegate	L. W. Swanson, M.D., Mason City
AMA Delegate	H. J. Smith, M.D., Des Moines
Councilor, 1st District	C. L. Kelly, Jr., M.D., Charles City
Councilor, 4th District	W. M. Krigsten, M.D., Sioux City
Councilor, 5th District	R. L. Wicks, M.D., Boone
Councilor, 6th District	C. N. Cooper, M.D., Waterloo
Councilor, 8th District	F. G. Ober, M.D., Burlington
Councilor, 11th District	Oscar Alden, M.D., Red Oak
Blue Shield Liaison	R. H. Kuhl, M.D., Creston
Delegates to the IMS	R. C. Larimer, M.D., Sioux City

The past-presidents were invited to stand and be recognized.

Dr. G. H. Scanlon introduced the two senior medical students from the College of Medicine at Iowa City who were present as guests of the Society, Mr. Bill Scott and Mr. Roger Flickinger. Mr. Flickinger spoke briefly regarding the student loan fund.

Reference Committee Reports

The following reference committee reports were approved by the House of Delegates.

LEGISLATION AND MEDICAL SERVICE

The Reference Committee on Legislation and Medical Service met in open session at 2:30 p.m., Sunday, April 26, 1964, and considered the various committee reports and resolutions assigned to it.

Opportunities were given to all delegates and Society members present at the meeting to express their views and ask questions on this material. The Reference Committee then met in executive session. The following is a report of its deliberations and conclusions item by item:

COMMENTS OF THE PRESIDENT ON MEDICAL ASSISTANCE TO THE AGED AND REMARKS OF DR. E. M. SMITH ON MAA IN IOWA

The above comments and remarks were reviewed by the Reference Committee. While this material was solely for informational purposes, the Committee feels the Dr. Edwards, our president, Dr. Elmer M. Smith, medical consultant to the Iowa Board of Social Welfare, and Drs. Coleman and Morrissey, the Iowa Medical Society representatives on the MAA Advisory Council, are to be complimented on the extensive work that has been put into this program and the excellent results achieved. The open discussion pointed up some of the deficiencies mentioned in the report and, from the views expressed by some of the Society members, this Reference Committee would urge the rectification of these deficiencies as soon as appears practically feasible, as promised by the president and Dr. Smith.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE COMMITTEE ON LEGISLATION

All members of your Reference Committee realize that this is no time for complacency in regard to the outcome of the present deliberations of the House Ways and Means Committee, which is now considering the King-Anderson Bill and so-called "positive" alternatives. The Reference Committee recognizes the importance and cogency of the material discussed here and urges the adoption of this supplemental report.

The Reference Committee would also like to commend Dr. R. C. Brown, of Mason City, for his excellent work as chairman of the Iowa Physicians Political League and for the enormous amount of time that he has spent on this endeavor.

Mr. Speaker, I move adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE COMMITTEE ON MEDICAL SERVICE

The first portion of this supplemental report deals with the advisability of including co-insurance and/or deductible principles in combination as a measure to reduce abuses of over-utilization. Your Reference Committee certainly agrees with this viewpoint.

Mr. Speaker, I move the adoption of this portion of the report. The second portion of this report deals with the question of hospital utilization surveys. Your Reference Committee was impressed by the testimony of Dr. G. G. Young, chairman of the Committee on Medical Service, at the open hearing, particularly with respect to the point that the "Iowa Medical Society should explore this problem in sufficient depth to determine where problems actually exist before some other organization conducts such a study without adequate medical supervision and completely apart from organized medicine." Therefore, your Reference Committee concurs with the Supplemental Report of the Committee on Medical Service in recommending that it continue to study the feasibility of its original plan for a joint utilization survey by the Iowa Medical Society and Iowa Hospital Association, and further, that after that exploration has been completed, the details be presented to the boards of trustees of the respective organizations for financial authorization to carry out the project. It is, of course, understood by your Reference Committee that the entire project will be discussed with the Iowa Medical Society Board of Trus-

tees before it is presented to the Board of Trustees of the Iowa Hospital Association.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE SUBCOMMITTEE ON MATERNAL AND CHILD HEALTH

The principal item in this report was the suggestion that the Iowa Medical Society endorse and encourage voluntary programs, sponsored at the local level by the medical profession and responsible school authorities, to require pupils and teachers to wear eye-protective devices under certain hazardous conditions. It further recommends that the Society support, in principle, the enactment of proper legislation to accomplish the above stated purpose. Your Reference Committee urges the adoption of this report.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE SUBCOMMITTEE ON MEDICAL ASSISTANCE TO THE AGED

The gist of this report concerned certain deficiencies which still exist in the MAA program. As previously indicated by your Reference Committee, we have had assurance from those engaged in this work that efforts will be made to correct these deficiencies at the earliest feasible opportunity. We were told by the Iowa Medical Society's representatives on the MAA Advisory Committee that the State Board of Social Welfare has accepted the unique system of usual and customary fees in good faith, and this is certainly a favorable change in attitude over earlier years. For these reasons, and others, there seems to be every probability that solutions will be found for problems such as those in anesthesia, mileage, renegotiation of fee schedules, etc.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE COMMITTEE ON BLOOD BANKING

This is a very comprehensive report and includes several items. (1) The matter of a lawsuit against the Commissioner of Insurance for the State of Iowa by the Blood Service Plan Insurance Company of Phoenix, Arizona. This was apparently resolved by passage of S. F. 443. This Reference Committee concurs in the idea that much credit should be given to the Iowa Medical Society and its legal counsel for their success in obtaining passage of this bill.

(2) The next item deals with a thorough and complete description of blood banking as requested by the Board of Trustees. It is the opinion of your Reference Committee that the Committee on Blood Banking has done an excellent job in defining the various aspects of this situation. We feel it should be complimented and that the "outline of blood banking" should be adopted.

(3) The next item in this report is concerned with resolutions referring to H. R. 8426 and H. R. 9238. This Reference Committee urges the adoption of these resolutions, and urges that the American Medical Association be notified of our approval of these resolutions.

Your Reference Committee also goes on record as recommending and endorsing the action of the House of Delegates of the AMA in its statement entitled "Position Statement on Blood Banking."

Mr. Speaker, I move adoption of this portion of the report, as amended.

SUPPLEMENTAL REPORT OF THE IMS PLAN AND SCOPE COMMITTEE

This report deals chiefly with Resolutions No. 1 and No. 10 on the subject of individual responsibility. Your Reference Committee agrees with the recommendation contained in this Supplemental Report, that an appropriate educational program for Iowa physicians regarding individual responsibility be developed by the Iowa Medical Society in cooperation with the sponsors of Resolutions No. 1 and No. 10.

Mr. Speaker, I move the adoption of this portion of the report.

The remainder of your Reference Committee's report concerns the following resolutions:

Resolution No. 2 Introduced by Fayette County Medical Society on the Subject of Federal Subsidization of the Blue Cross-Blue Shield Programs and *Resolution No. 4*, a duplication of Resolution No. 2, *Introduced by the Jefferson County Medical Society*. In the absence of debate, the Reference Committee recommends adoption of these resolutions.

Mr. Speaker, I move adoption of this portion of the report.

Resolution No. 3 Introduced by Fayette County Medical Society on Exploration of the Deductible Principle in the Insurance Financing of Medical Care and *No. 5*, a duplication of Resolution No. 3, *Introduced by the Jefferson County Medical Society*. We approve of the Resolution, but recommend that the first resolve be amended as follows: "Resolved, That the medical profession, in meeting its total medical responsibility to the public, initiate and back a full exploration of the deductible and/or co-insurance principles in the health insurance field, utilizing the actuarial facilities of the Blue Cross and Blue Shield programs which have enjoyed the privilege of being backed and sponsored by the medical profession, and be it finally."

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 17 Introduced by Marion County Medical Society on Vexatious Litigation. Earlier this Resolution had been withdrawn on the floor of the House of Delegates by its sponsor. One of the sponsors, however, appeared at the Reference Committee hearing, and urged support of the original resolution on vexatious litigation as approved by the Iowa Medical Society and supported by its delegates at the 1963 AMA Annual Meeting. Since your Reference Committee understands the Resolution continues to be under active consideration by the American Medical Association's Bar Liaison Committee, no action was thought necessary by your Reference Committee.

Mr. Speaker, I move adoption of this portion of the report.

Resolution No. 22 Introduced by Union-Taylor County Medical Society on the Subject of Revision of the MAA Fee Schedules. As previously stated by your Reference Committee, we have had assurances from those engaged in this work that at the earliest opportunity an effort will be made to correct these deficiencies, certainly including the matter of updating or revising of the MAA Fee Schedule. It is, therefore, recommended that no action be taken on this Resolution at this time.

As an example of one of the problems which will come up, from time to time, an ophthalmologist wrote

the following to Dr. William J. Morrissey, chairman of the Iowa Medical Society's Subcommittee on Medical Assistance to the Aged, under date of April 23, 1964:

"It has only in the last week come to my attention that there is a serious problem in the MAA Program regarding the prescribing and fitting of spectacles. As you know, most Ophthalmologists do not dispense their own glasses but have their medical spectacle prescriptions filled by an optician. None of the opticians of the State of Iowa have been designated as vendors under the MAA Program. In order for an ophthalmologist to participate in this program and prescribe glasses, it will be necessary for him to either dispense glasses to the patient or have them dispensed by a reputable optician and have the optician bill the opthalmologist for glasses who will in turn bill the patient. Both of these alternatives are completely unsatisfactory to me as I consider both of them questionable from an ethical point of view, and it will be impossible for me to participate in the MAA Program so far as the prescribing of glasses is concerned unless the present regulations are changed so as to allow opticians to act as vendors under the MAA Program.

"I believe this is quite a serious problem and it is one which will tend to embarrass the Iowa Medical Society, unless it can be satisfactorily resolved.

"Yours sincerely, Arthur H. Downing, M.D."

With reference to the above problem, your Reference Committee has been assured, again, by Dr. Elmer Smith, medical consultant to the State Board of Social Welfare, that the above problem has already been firmly brought to his attention, and it seems very likely that within only a week's time a favorable change will be made in the regulations.

Your Reference Committee feels that the above is an illustration of the high degree of cooperation and mutual understanding now existing between the State Board of Social Welfare, the Medical consultant and the Iowa Medical Society.

Mr. Speaker, I move adoption of this portion of the report.

Resolution No. 23 Introduced by Pottawattamie County Medical Society re Compulsory Immunization for School Children. This particular Resolution inspired much pro and con discussion both in the open meeting and in the executive session of your Reference Committee. Opinion was so divided that no definite recommendation could be given. Therefore, your Reference Committee recommends that no action be taken on this Resolution.

Mr. Speaker, I move adoption of this portion of the report.

Resolution No. 24 Introduced by Decatur County Medical Society re Boards of Trustees of County Hospitals. Consideration of the implications involved in the Resolution leads the Reference Committee to suggest that no action be taken on this Resolution in its present form, but that it be referred to the Committee on Legislation for further consideration and report to the 1965 House of Delegates meeting.

Mr. Speaker, I move adoption of this portion of the report.

Resolution No. 34 Introduced by Robert Stickler, M.D., Delegate, Polk County Medical Society, on the Subject of Mental Health Facilities. We recommend adoption of this Resolution as stated.

Mr. Speaker, I move adoption of this portion of the report.

Resolution No. 35 Introduced by Boone County Medical Society on MAA County Ranges of Fees. The gist of this Resolution was covered in previous portions of this report; therefore, no action is recommended on this resolution.

Mr. Speaker, I move adoption of this portion of the report.

Resolution No. 36 Introduced by R. S. Jaggard, M.D., Delegate, Fayette County Medical Society in Opposition to the Nationalization of Medicine. We move the adoption of this Resolution.

Mr. Speaker, I move adoption of this portion of the report.

Mr. Speaker, I move adoption of this report as a whole, as amended.

Respectfully submitted,
I. J. HANSSMANN, M.D., *Chairman*
R. C. LARIMER, M.D.
V. H. CARSTENSEN, M.D.
H. R. HIRLEMAN, M.D.
J. D. CONNER, M.D.

JUDICIAL COUNCIL

Your Judicial Council, meeting as a Reference Committee, had five resolutions to consider. Resolutions No. 31 and No. 32 both dealt with the "hyphenation" of the Decatur and Ringgold County Medical Societies, with the understanding that each should retain its separate representation. We recommend that the two resolutions be approved.

Mr. Speaker, I move the adoption of this portion of our report.

On Resolution No. 28, from the Scott County Medical Society, your entire Reference Committee is in accord with the tenor of the resolution, that employer-employee relations should not be permitted between hospitals and physicians. A prohibition of such relationships was made a provision of Iowa law by House File No. 21. If there are such practices as have been alleged in the resolution, formal complaints concerning them should be brought to the attention of the IMS Judicial Council.

Mr. Speaker, I move the adoption of this portion of our report.

Your Reference Committee discussed Resolution No. 21, from the Dallas-Guthrie County Medical Society, regarding compensation of dispensing physicians under the Old Age Assistance program, and came to the following conclusions. The present compensation seems completely unrealistic. Under current procedures, physicians are required to dispense some drugs to OAA patients at less than their actual cost. Your Reference Committee strongly recommends that the IMS Subcommittee on Public Assistance approach the State Board of Social Welfare for the correction of this inequity.

Mr. Speaker, I move the adoption of this portion of our report.

Your Reference Committee was in complete agreement with the basic resolves in Resolution No. 37, from the Carroll County Medical Society regarding physicians' owning pharmacies or leasing space for pharmacies in medical-clinic buildings. It is ethical for a physician to invest money in a pharmacy or to dispense drugs, provided that there is no exploitation of the patient and provided that the patient is permitted free choice of pharmacy.

However, it must be pointed out that to conform with ethical principles in the rental of space for a pharmacy

in a clinic building, the lease must be on a fixed-fee basis only.

Mr. Speaker, I move the adoption of this portion of our report.

Mr. Speaker, I move the adoption of our report as a whole.

Respectfully submitted,
C. E. RADCLIFFE, M.D., *Chairman*
C. L. KELLY, JR., M.D.
J. F. PAULSON, M.D.
J. L. POWERS, M.D.
W. M. KRIGSTEN, M.D.
N. W. IRVING, JR., M.D.
J. W. FERGUSON, M.D.
F. G. OBER, M.D.
K. E. LISTER, M.D.
E. E. GAMET, M.D.
W. G. KUEHN, M.D.

MISCELLANEOUS BUSINESS

Your Reference Committee on Miscellaneous Business met and considered in open session those supplemental reports which were referred to it.

The Supplemental Report of the Osteopathic Committee and MD Section of the MD/DO Liaison Committee was considered first, and after hearing testimony from physicians concerned, your Committee recommends the adoption of this Report with the following recommendations: (a) That the Osteopathic Committee determine an appropriate procedure for withdrawing approval of previously approved osteopathic physicians and surgeons, and present that procedure to the Judicial Council for its approval and implementation; (b) Your Committee further recommends that this procedure for the withdrawal of approval be initiated by the county medical society for unethical conduct on the part of the individual osteopathic physician and surgeon.

Mr. Speaker, I move the adoption of this portion of the report.

Your Reference Committee commends the members of the Osteopathic Committee and the MD Section of the MD/DO Liaison Committee for their many hours of diligent effort during the year.

Mr. Speaker, I move the adoption of this portion of the report.

Your Reference Committee considered testimony in support of the Supplemental Report of the Committee on Scientific Exhibits. Your Reference Committee regrets but must acknowledge that interest in these scientific exhibits is inadequate and that their relative cost is high. Your Reference Committee therefore recommends that scientific exhibits at the annual meetings of the Iowa Medical Society be discontinued.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of this report as a whole.

In conclusion, I wish to express my deep appreciation to the members of this Reference Committee for their patience and devotion to duty. It has been a privilege to serve with such men.

Respectfully submitted,
E. E. LINDER, M.D., *Chairman*
L. J. KIRKHAM, M.D.
C. V. EDWARDS, JR., M.D.
JOHN SEAR, M.D.
K. J. JUDIESCH, M.D.

ARTICLES OF INCORPORATION AND BY-LAWS

The Reference Committee on Articles of Incorporation and By-Laws considered the supplemental report of the Standing Committee on Articles of Incorporation and By-Laws.

The Standing Committee on Articles of Incorporation and By-Laws had considered and approved a proposed amendment to the By-Laws which had emanated from an *ad hoc* committee of the Judicial Council, appointed to revise the rules of the Grievance Committee. This proposed amendment would delete paragraph 3, Chapter V, Section 14 of the By-Laws, viz:

"No member of the Grievance Committee may participate in deliberation of questions concerning the conduct of a physician residing in the jurisdiction of that Committee member's Councilor District."

The logic for the proposal of the amendment was explained as follows: "The *ad hoc* committee and the Grievance Committee officers were unable to see that the representative of a defendant's councilor district should be excluded from Grievance Committee hearings, unless he requests to be excluded. They commented that in actions before boards of censors of county medical societies all the board members are the defendant's neighbors, and also that the By-Laws of the Iowa Medical Society do not require that the *councilor* from the defendant's district be excluded from hearings held before the Judicial Council.

To fulfill the intent of the Supplemental Report of the standing committee and the request of the Judicial Council, the amendment as proposed and as approved by the Reference Committee is as follows:

Resolved, That the By-Laws of the Iowa Medical Society, as amended, be and hereby are amended by deleting from Chapter V, Section 14, thereof, the whole of the third paragraph.

Mr. Speaker, I move the adoption of this portion of the report as amended.

The Reference Committee on Articles of Incorporation and By-Laws considered Resolution No. 19, introduced by the Dallas-Guthrie County Medical Society, pertaining to the forming of a new councilor district. The Reference Committee recommends that this resolution *NOT* be adopted.

Mr. Speaker, I move the adoption of this portion of the report.

The Reference Committee on Articles of Incorporation and By-Laws considered Resolution No. 20, introduced by the Dallas-Guthrie County Medical Society. In part, this resolution reiterates Resolution No. 19, but requests that the Articles of Incorporation and By-Laws of the Iowa Medical Society be amended to form *two* new councilor districts, the first made up of Polk-Warren Counties and the second made up of Linn and Johnson Counties. The remaining counties of the present districts would remain as the respective Fifth and Seventh Councilor Districts.

The Reference Committee recommends that this resolution *NOT* be adopted.

Mr. Speaker, I move the adoption of this portion of the report.

Finally, the Reference Committee on Articles of Incorporation and By-Laws considered Resolution No. 27, introduced by Scott County Medical Society, pertaining to Iowa Medical Society Nominating Committee procedure.

The Reference Committee, cognizant of the difficulties presented, approves the intent of the Resolution.

However, inasmuch as the By-Laws do not specifically provide for district caucuses to submit names of candidates in nomination, the resolution is reworded to maintain the intent, but in such a manner as to be in accord with the By-Laws as they now stand. The amendment as approved by the Reference Committee is as follows:

Resolved, That the By-Laws of the Iowa Medical Society as amended, be and hereby are amended by deleting the period at the end of the next to the last sentence thereof and adding thereto the following: "and except that by unanimous consent of the Nominating Committee, only one candidate for an office shall be required in any case in which only one candidate for such office has been suggested by members of the Nominating Committee."

This sentence and the last sentence of the paragraph would then read as follows: "No later than 15 days prior to the Annual Meeting, the Committee shall report its official ticket containing two or more candidates for each office to be filled at the Annual Meeting, except as provided in Section 3 and except that by unanimous consent of the Nominating Committee, only one candidate for an office shall be required in any case in which only one candidate for such office has been suggested by members of the Nominating Committee. This ticket shall be sent to all members of the Society no later than 10 days prior to the Annual Meeting."

Mr. Speaker, I move the adoption of this portion of the report.

The Reference Committee then proposes the following:

Be It Further Resolved, That the chairman of the Board of Trustees and the secretary of the Iowa Medical Society be and they hereby are authorized and directed to sign, acknowledge and publish the foregoing Amendments as the Ninth Amendment to the By-Laws of the Iowa Medical Society, as amended, and to do all other things required by law or otherwise to execute, complete and place in lawful effect such Amendments.

Mr. Speaker, I move the adoption of this portion of the Reference Committee's report.

Mr. Speaker, I move the adoption of the Reference Committee's report as a whole as amended.

Respectfully submitted,
C. J. SMITH, M.D., *Chairman*
J. R. KERSTEN, M.D.
D. L. TREFZ, M.D.
K. K. HAZLET, M.D.
R. G. ROBINSON, M.D.

BLUE SHIELD

Your Reference Committee on Blue Shield was given the responsibility of considering several items referred to it by the House of Delegates. These included Supplemental Report "H" of the Board of Trustees; an Addendum to Supplemental Report "H"—Progress Report of the IMS Pathology—Blue Shield Study Committee; nine exhibits to report "H"; the IMS Policy-Evaluation Committee Reports; and 12 separate resolutions.

Your Reference Committee met in very extensive open session on Sunday afternoon to hear opinions on these subjects from all interested parties. The Reference Committee sessions were well attended by a large number of delegates and other members of the Iowa Medical Society. Several lengthy executive sessions were held with the president of Blue Shield, the chairman of the Board of Blue Shield, the IMS Board of Trustees, the IMS executive director, the chairman of the IMS Policy-Evaluation Committee, and Mr. Carl Tiffany, consulting actuary.

Dr. Lowry was asked by the Reference Committee to pinpoint the relationship between Iowa Medical Service (Blue Shield) and the Iowa Medical Society. He outlined the association between the two corporations, and his final conclusion was that Blue Shield is obligated to comply where legally possible with the directives of the House of Delegates of the Iowa Medical Society, but that the final decision is that of the Blue Shield Board of Directors.

Mr. Speaker, I move the adoption of this portion of the report.

I. *Supplemental Report "H" of the Board of Trustees, including exhibits one through nine.* It is the feeling of your Reference Committee that many of the problems detailed in this report once again reflect the breakdown in communications between the Iowa Medical Society and Blue Shield. Since communication is the essence of better relationships between Blue Shield and the Iowa Medical Society, these communications must be provided in a bilateral manner, in complete detail and in adequate time to be of help in the consideration of items under study. It is felt this breakdown in communications is a chronic, recurrent problem and that little has been accomplished by the Board of Trustees of the Iowa Medical Society and the Board of Directors of Blue Shield to remedy the situation. It is the opinion of your Reference Committee that some of this has deteriorated into personality conflicts.

Both groups are sincere in their efforts to promote the ideas of each corporation. The Iowa Medical Society started Blue Shield and the Committee feels the Society should perpetuate it. The Committee believes that many of the disagreements can be resolved to the satisfaction of both parties and the Insurance Commissioner with adequate effort on the part of Blue Shield management and the IMS Board of Trustees. Your Reference Committee recommends that Blue Shield turn to the Iowa Medical Society for guidance and approval under the following situations:

(1) When new contracts are being considered.

(2) When changes or new interpretations of existing contracts are contemplated.

(3) When changes are proposed regarding the philosophy and technique of paying claims.

(4) When information comes to light disclosing abuses of the Plan. (These should be referred to the appropriate grievance committee.)

The Delegates from the IMS shall be instructed to report any changes in the four categories named to the board of Trustees immediately upon their being considered by the Blue Shield Board.

Mr. Speaker, I move the adoption of this portion of the report, as amended.

Your Reference Committee recommends that a progress report on IMS-Blue Shield relations shall be presented to the Executive Council no later than Nov. 1, 1964, and if during that period of time, it is determined that the Society and Blue Shield cannot establish reasonable working relationships, a special meeting of the House of Delegates be called for the purpose of considering a friendly parting of the ways between the IMS and Blue Shield.

Mr. Speaker, I move the adoption of this portion of the report, as amended.

II. *The Addendum to Supplemental Report "H" by the Board of Trustees (Subject: Progress Report of the IMS Pathology-Blue Shield Study Committee).* This was referred to this Committee for informational purposes and no action is necessary.

Mr. Speaker, I move the adoption of this portion of the report.

III. *IMS Policy-Evaluation Committee's Majority Report and Minority Report.* In view of the directive of the 1963 House of Delegates, we feel that all Blue Shield programs should be converted directly to the Green Book. Therefore, the Committee recommends the following contract changes:

(1) Discontinue the A250 contract as rapidly as possible.

Mr. Speaker, I move the adoption of this portion of the report.

(2) Replace B300 ($3,600 family contract)—$3 unit Red Book—with B300G contract ($4,000 family)—$3 unit Green Book, and add a net worth clause of $40,000.

Mr. Speaker, I move the adoption of this portion of the report.

(3) Replace B400 ($3,600 single—$5,400 family—$54,000 net worth clause)—$4 Gray Book—with B450 ($4,00 single—$6,000 family)—$4.50 unit Green Book. Apply net worth clause of $54,000. For legal reasons this net-worth clause could not apply to the federal employees' program. Authorize Blue Shield to promote sale of B450 program to all eligible groups and individuals.

Mr. Speaker, I move the adoption of this portion of the report.

(4) Recommend approval of sale of major medical contracts as a supplement to all basic Blue Shield contracts. Your Committee feels this is an opportunity to implement and extend the usual and customary fee concept.

Mr. Speaker, I move the adoption of this portion of the report, as amended.

(5) Make the special contracts for the aged uniform ($2,500—$4,000—30 to 70 day option—$30,000 net worth clause—$3 unit Green Book).

Mr. Speaker, I move the adoption of this portion of the report.

In reviewing the sale of contracts to federal empolyees, the Committee concurs with the Policy-Evaluation Committee that the $6,000 family income contract should be a maximum full-service level. At the present time, the Committee feels that the Blue Shield program full-service income limit should be maintained at the $6,000 level.

Mr. Speaker, I move the adoption of this portion of the report.

The Committee considered at great length and heard a detailed discussion regarding the pros and cons of continuing Blue Chip policies. It recommends continuation of Blue Chip with the following suggestions for improvement:

(a) That the Blue Shield Board of Directors impress upon the Insurance Commissioner that the usual, customary and reasonable fee concept is actuarially sound.

(b) That local claims committees be established to review fees that are questioned by Blue Shield.

The Committee feels that the Blue Chip program, with its philosophy of the usual and customary fee concept, must be continued in view of the Society's position in the development of present and future programs.

Mr. Speaker, I move the adoption of this portion of the report.

IV. *Resolutions.* The resolutions were considered as follows:

Resolution No. 1 introduced by Carroll County Medical Society. Subject: Blue Shield. The basic substance of this resolution has been covered in the Committee's recommendations regarding the Policy-Evaluation Committee Report and therefore requires no action.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 9 introduced by Webster County Medical Society. Subject: A Blue Shield Policy Paying Usual and Customary Fees. This subject has been dealt with in the recommendations concerning the Policy-Evaluation Committee Report and requires no action.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 26 introduced by Johnson County Medical Society. Subject: Blue Shield-Blue Chip Plan; and Resolution No. 38 introduced by Dubuque County Medical Society. Subject: Blue Shield. These were considered jointly. These resolutions request the withdrawal of the Blue Chip policy. Your Reference Committee recommends they not be adopted.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 33 introduced by Lee County Medical Society. Subject: Blue Shield, Blue Chip and Major Medical. Section one: "Resolved, That the Iowa Medical Society reaffirm its support of the original concept of the Blue Chip policy in that this contract pay the doctor his usual, customary and reasonable fee"; This portion of the resolution has been covered in another section of this report and needs no action.

Mr. Speaker, I move the adoption of this portion of the report.

Section two of Resolution No. 33: "Resolved, That the proposed major medical contract of Blue Shield with its concept of payment of *the* doctor's 'reasonable and necessary charges' be heartily approved by this House of Delegates. . . ." Four stipulations were set forth as to how positive, documented assurance in writing should be given to the Iowa Medical Society by the Blue Shield Board of Directors and the Insurance Commissioner. The Committee is in accord with the intent of this portion of the resolution but believes the requirements outlined are impracticable and therefore recommends no action.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 8 introduced by Webster County Medical Society. Subject: Deductible and Co-insurance Features in Blue Shield. The Committee agrees with the concept stated in this resolution. It understands that deductible plans are already being offered and that the new major medical contract represents co-insurance, but it does not feel this can be required in all policies. Therefore, your Reference Committee recommends that this resolution not be adopted.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 25 introduced by Johnson County Medical Society. Subject: Blue Shield Co-insurance Proposal. Your Reference Committee is sympathetic toward this resolution and would point out that the co-insurance principle will be implemented in the major medical plan, if approved by this House of Delegates. The Committee also feels, as indicated earlier in this report, that there is a need for other types of contracts, and it therefore recommends that this resolution not be adopted.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 10 introduced by Webster County Medical Society. Subject: Blue Shield Full Service Policies Limited to Low Income Group. In view of the recommendations made in the Policy-Evaluation Committee Report, we feel this resolution should not be adopted, primarily because it includes the phrase, "to sell one and only one full service policy."

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 11 introduced by Black Hawk County Medical Society. Subject: Opposition to Blue Shield Full-Service Policies for High-Income Groups. This resolution was covered in the Policy-Evaluation Committee Report, wherein it is recommended that no increase above the $6,000 program be made in the high-income level contracts. Therefore, no action need be taken on this resolution.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 6 introduced by Woodbury County Medical Society. Subject: Resolutions Concerning Blue Shield. Since the concepts of this resolution have been covered in this report, or in previous actions of the House of Delegates, and because the resolution contains a complexity of statements, your Reference Committee feels it could not be acted upon.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 12 introduced by Black Hawk County Medical Society. Subject: Reaffirmation of Requirements that Blue Shield Contracts Receive Approval From House of Delegates. The intent of this resolution was dealt with in the recommendations regarding Supplemental Report "H" of the Board of Trustees and no further action is requred.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 29 introduced by Montgomery County Medical Society. Subject: Blue Shield Balloting Procedures. "Resolved, That this House of Delegates recommends to Blue Shield that it amend its By-Laws to provide a choice of candidates for each vacancy by leaving an appropriate space for a write-in preference for each position on the ballot." Your Reference Committee recommends adoption of this resolution.

Mr. Speaker, I move the adoption of this portion of the report.

Your Reference Committee has attempted to make firm and realistic recommendations keeping in mind the fluid situation of the problems. The Committee would like to thank the Iowa Medical Society staff, Mr. Carl Tiffany, consulting actuary, and all those who appeared before the Committee in executive session for their help and advice.

Your Chairman would like to thank personally each member of the Committee for the long hours, concentrated efforts and congenial attitude in dealing with this difficult and controversial report.

Mr. Speaker, I move adoption of this report as a whole, as amended.

Respectfully submitted,

L. D. CARAWAY, M.D., *Chairman*, Monticello
M. E. BARRENT, M.D., Clinton
R. J. COBLE, M.D., Lake Park
C. D. ELLYSON, M.D., Waterloo
J. C. PETERSON, M.D., Hartley

REPORTS OF OFFICERS

The Committee met in open session with members of the Board of Trustees, IMS staff, interested delegates and guests. Your Committee considered resolutions number 7, 14, 15, 18 and 30, as well as Supplemental Reports E, F and G of the Board of Trustees.

Resolution No. 7 (Cass County): The Reference Committee recommends that the Board of Trustees of the Iowa Medical Society confer with the Board of Directors of Iowa Medical Service (Blue Shield) to determine the feasibility of setting up a conference at the time of the Annual Meeting of the Iowa Medical Society, to allow a general forum for the physicians of the state. It is recommended that, if possible, a Monday afternoon session be scheduled which will not interfere with the scientific program.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 14 (Scott County): This Committee heartily concurs with this resolution commending Mr. Donald L. Taylor and the staff of the Iowa Medical Society for their loyal and dedicated service, which has always been given with the greatest fervor and unselfishness. The heartfelt thanks of the entire Society is extended to them.

Mr. Speaker, I move the adoption of this portion of the report.

Board of Trustees Supplemental Report G and Resolution No. 18 (Fifth Councilor District Caucus): The above resolution and report were considered together, as well as a complete review of the financial situation of the Society and the architect's report. There was an extensive discussion by interested delegates and officers. We wish to express particular thanks to Dr. John Gustafson, Des Moines, for his many hours of work on behalf of the Iowa Medical Society and for his detailed report. We reaffirm the confidence placed in the Board of Trustees as expressed in the Reference Committee report on Reports of Officers presented in 1963. We commend the trustees for following up the mandate of the previous House of Delegates in obtaining architectural consultation and presenting a means of financing the structure. Factors of convenience, economy, prestige and future needs, as well as potential memorial contributions were all considered. Perhaps the desired balance between economy and the prestige factors cannot be satisfactorily achieved by deliberations of a reference committee. However, we feel that both economy and prestige are of prime importance and not necessarily mutually exclusive. This Committee recommends that the Board of Trustees consider the desirability of interviewing other architectural firms. There appears to be room for economizing without sacrificing structural integrity or external attractiveness or abandonment of the highly esteemed West Des Moines site. In view of the Society's financial condition, we are sure the Board of Trustees will employ reasonable frugality in pursuing this endeavor. We recommend that the president appoint a Building Committee (one of whose members should be Dr. John Gustafson, of the Fifth Councilor District) to act under the supervision of the Board of Trustees, and that this committee be empowered to proceed with deliberate speed with building plans and contracts on the already acquired site at Tenth and Grand in West Des Moines.

Mr. Speaker, I move the adoption of this portion of the report, as amended.

Board of Trustees Supplemental Report E:

Point No. 1 (MAA)—We strongly commend the offi-

cers and committees of the Iowa Medical Society for their successful negotiations in regard to the MAA Program, and in particular for instituting the usual and customary fee concept.

Mr. Speaker, I move the adoption of this portion of the report.

Point No. 5 (Area Meetings)—Your Committee feels that the sixteen area meetings which were arranged in the fall of 1963 constituted an appropriate function of the IMS, and recommends that, when indicated, similar programs be instituted to keep the physicians of this state properly informed.

Mr. Speaker, I move the adoption of this portion of the report.

Point No. 8 (Medicare Contract)—This year, the Iowa Medical Society will enter into negotiations with the Department of Defense for the administration of the Medicare program in Iowa. We recommend the Iowa Medical Society instruct the Board of Trustees to renegotiate the present Medicare fee schedule on a usual and customary fee basis. In the event these negotiations fail, we recommend that the Board of Trustees ask further guidance from the Executive Council.

Mr. Speaker, I move the adoption of this portion of the report.

Point No. 10 (Iowa Association of the Professions)—This Committee approves and encourages the formation of an Iowa Association of the Professions, and recommends that the IMS take the leadership in the development of such an organization.

Mr. Speaker, I move the adoption of this portion of the report.

Point 11 (House of Delegates Proceedings) and Point No. 17 (Printing of Executive Council Meeting minutes in JOURNAL)—We recommend that the Board of Trustees be empowered to use its discretion in deciding what portions of the House of Delegates proceedings and Executive Council meeting minutes shall be published in the JOURNAL OF THE IOWA MEDICAL SOCIETY, and that the councilor and deputy councilor system be used for transmitting any other essential information.

Mr. Speaker, I move the adoption of this portion of the report.

Point No. 14 (Baldridge-Beye Memorial Fund)—Your Committee then considered the Resolution which appeared under Point No. 14, and which reads as follows:

WHEREAS, In 1936 the Baldridge-Beye Student Loan Fund was established as a memorial to two physicians who lost their lives carrying out assignments for the Iowa Medical Society, and

WHEREAS, In 1951 the Iowa Medical Society vitalized the Memorial and voted to allot $1.00 per dues-paying member to the Memorial, and

WHEREAS, In 1960 the House of Delegates directed the Baldridge-Beye Memorial Fund be contributed to the IMS Educational Loan Fund effective January 1, 1961, and

WHEREAS, The Iowa Medical Society Educational Loan Fund has now been reorganized into the Iowa Medical Foundation, and

WHEREAS, The Iowa Medical Foundation is rapidly becoming a self-supporting Foundation, receiving contributions from individuals and organizations, now therefore be it

Resolved, That effective January 1, 1964, the allocation from IMS dues for the Baldridge-Beye Memorial Fund be discontinued and be it further

Resolved, That a recommendation be transmitted to the Board of Trustees of the Iowa Medical Foundation inviting it to establish a suitable memorial to perpetuate the Baldridge-Beye Memorial Fund.

Mr. Speaker, I move the adoption of this resolution.

Point No. 16 (Annual Meeting Program)—Your Reference Committee again feels that a program has been developed with outstanding speakers from many fields, and wishes to commend the Program Committee for the excellent and well-balanced format.

Mr. Speaker, I move the adoption of this portion of the report.

All other sections of Supplemental Report E of the Board of Trustees were reviewed and approved. Your Reference Committee wishes to take this opportunity to thank the Board of Trustees for its detailed report, and to support the Resolution of the Greene County Medical Society (No. 30) on behalf of the IMS, in expressing appreciation to the members of the Board of Trustees for their selfless service in our behalf.

Mr. Speaker, I move the adoption of this portion of the report.

Board of Trustees Supplemental Report F and Resolution No. 15 (Cerro Gordo County): The 1963 Budget and proposed 1964 Budget were carefully reviewed, with a detailed explanation by a staff member on behalf of Dr. Sunderbruch. To provide funds for the new medical society building, and to put the IMS on a sound fiscal basis, we recommend the dues of the IMS be raised to a total of $125 per year, effective January 1, 1965.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of this report as a whole, as amended.

Respectfully submitted,
ERLING LARSON, M.D., *Chairman*, Davenport
J. P. TROTZIG, M.D., Akron
M. A. BLACKSTONE, M.D., Sioux City
F. A. ROLFS, M.D., Aplington
G. W. HOWE, M.D., Iowa City

The following resolutions were then adopted by the House of Delegates:

Resolved, That the House of Delegates accept the invitation of the Polk County Medical Society to hold the IMS annual meeting in Des Moines in 1966.

* * *

WHEREAS, Blue Shield has admirably served the people of Iowa and the medical profession in pioneering prepayment concepts in medical care; and

WHEREAS, The several members of the Blue Shield Board have consistently served unselfishly and diligently; and

WHEREAS, It is our opinion that these same men have always acted in what they personally considered the best interests of the medical profession, the subscribers and the public at large; therefore, be it

Resolved, That this House of Delegates extend its sincere and warm thanks to the members of the Board of Directors of Blue Shield for their efforts; and be it

Further Resolved, That a copy of this resolution be sent to each member of the Board.

* * *

Resolved, That the House of Delegates authorize the Board of Trustees to prepare a suitable testimonial to be presented to Dr. C. V. Edwards in recognition of his outstanding service as president of the Society.

* * *

Resolved, That the actions of the Board of Trustees of the Iowa Medical Society from the date of the last annual meeting to date be and they hereby are approved, ratified and confirmed.

* * *

Resolved, That the House of Delegates authorizes the Blue Shield Board to explore further the principle of dual-coverage exclusion in all of its basic policies.

* * *

The Speaker expressed appreciation to the IMS staff, sergeants at arms, the tellers, and the Program Committee.

It was announced that immediately following the adjournment of the House of Delegates, organizational meetings of the Board of Trustees and Judicial Council would take place.

The House of Delegates was adjourned by the Speaker at 12:30 p.m.

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Third District, John L. Powers, Estherville	1966
Fourth District, William M. Krigsten, Sioux City	1967*
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Eighth District, James F. Bishop, Davenport	1965
Ninth District, Kenneth E. Lister, Ottumwa	1965
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Leslie W. Swanson, Mason City	December 31, 1966*
Herman J. Smith, Des Moines	December 31, 1966*

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THE JOURNAL

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* Re-elected at the 1964 Annual Meeting.

N. W. Irving, Des Moines, resigned as Councilor, Fifth District, to be effective immediately following the 1964 Annual Meeting. Therefore, Ralph Wicks is completing Dr. Irving's unexpired term which will be two years.

F. G. Ober, Burlington, resigned as Councilor, Eighth District, following his election to the office of President Elect of the Iowa Medical Society, and James F. Bishop, Davenport, was appointed by the Board of Trustees to serve until the 1965 Annual Meeting.

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Fatland, John L., Des Moines
Faust, John H., Manson
Fawcett, Kennedy C., Ames
Fee, Charles H., Denison
Feightner, Robert L., Fort Madison
Feldick, Harley G., Buffalo Center
Fellows, Joseph G., Ames
Felter, Allan G., Van Meter
Fenton, Charles D., Bloomfield
Fenton, Robert L., Centerville
Ferguson, John W., Newton
Ferguson, R. Paul, Lake City
Ferlic, Rudolph J., Carroll
Fernando, Manuel M., Independence
Fesenmeyer, Charles R., Davenport
Fickel, Jack D., Red Oak
Field, Grace E. W., Juneau, Alaska
Fieseler, Walter R., Okoboji (A.M.)
Fieselmann, George F., Spencer
Fillenwarth, Floyd H., Charles City
Fincham, Richard, Iowa City
Finken, Dean E., Cedar Rapids
Fisch, Roman J., Le Mars
Fischer, Harry W., Iowa City
Fisher, William A., Creston
Fishman, Harlow J., Cherokee
Fisk, Charlotte, Des Moines
Fitz, Annette E., Coralville
Flannery, Francis E., Cedar Rapids
Flater, Norman C., Floyd
Flatt, Adrian E., Iowa City
Flocks, Rubin H., Iowa City
Floersch, Eugene B., Council Bluffs
Flood, James L., Denison
Flynn, Charles H., Cheyenne, Wyoming
Flynn, Gordon A., Davenport
Flynn, James R., Jr., Cedar Rapids
Foley, Robert J., Davenport
Foley, Walter E., Davenport (L.M.)
Foley, Walter E., Jr., Davenport
Fomon, Samuel J., Iowa City
Fordyce, Frank W., Des Moines (A.M.)
Forsythe, Dorothy C., Newton
Forsythe, Frank E., Newton
Foss, John F., Burlington
Foss, Robert H., Des Moines
Foster, Morgan J., Cedar Rapids
Foster, Warren H., Clinton
Foster, Wayne J., Cedar Rapids
Fowler, Willis M., Iowa City
Fox, Ray A., Charles City
Fox, Stephan, Ottumwa
Franchere, Chetwynd M., Mason City
Franey, William E., Cedar Rapids
Frank, Louis J., Sioux City (A.M.)
Frank, Owen L., Maquoketa
Fransco, Peter P., Ruthven
Fraser, James B., Des Moines
Fraser, John H., Monticello
Frech, Raymond F., Newton
Freed, David A., West Union
French, Valiant D., Cedar Falls (A.M.)
French, Vera V., Bettendorf
Frenkel, Hans S., Clarinda
Friday, Walter C., Burlington
Frink, Lyle F., Spencer
From, Paul, Des Moines
Frost, John F., Iowa City
Frost, Loraine H., Iowa City
Fry, Gerald A., Vinton
Fuerste, Frederick, Jr., Dubuque
Fuller, Lyle R., Garner
Funk, David C., Iowa City
Furumoto, Kiyoshi, Keosauqua

Galbraith, William B., Iowa City
Galinsky, Leon J., Des Moines
Gallagher, John P., Oelwein
Gamet, Elmo E., Lamoni
Gangeness, Leonard G., Des Moines
Gann, Edward R., Sigourney
Gannon, James, Laurens
Gantz, A. Jay, Greenfield
Ganzhorn, Harold L., Mapleton
Ganzhorn, Jack L., Mapleton
Garber, Keith A., Corydon
Gardner, Harold O., Waterloo
Gardner, James I., Iowa City
Gardner, John R., Lisbon (L.M.)
Garland, John C., Marshalltown
Garner, James H., Des Moines
Garred, John L., Whiting
Garred, William P., Onawa
Garry, Patrick E., Dyersville
Gartin, Thomas D., Ames
Garvy, Andrew C., Iowa City
Gatzke, Laurence D., Muscatine
Gauchat, Robert D., Iowa City
Gauger, John W., Early
Gaukel, Leo A., Onawa
Gault, James B., Creston
Gearhart, George W., Springville (L.M.)
Gee, Kenneth J., Shenandoah
Gelfand, Arthur B., Sioux City
Gelman, Webster B., Iowa City
Geoghegan, Brian P., Des Moines
George, Louis A., Remsen
Gerard, Russell S., II, Waterloo
Gerken, James F., Cedar Falls
German, Robert C., Marshalltown
Gernsey, Merritt N., Long Beach, Calif. (L.M.)
Gerstman, Herbert, Marion
Gessford, Howard H., George
Getty, Everett B., Primghar
Ghrist, Thomas D., Des Moines
Gibbs, George M., Burlington
Gibson, Chelsea D., Sac City
Gibson, Douglas N., Des Moines
Gibson, Paul E., Des Moines (A.M.)
Gibson, Preston E., Davenport
Giegerich, Walter F., Atlantic
Gildea, Dorothy J., Davenport
Giles, Francis E., Fort Dodge
Giles, W. Clark, Council Bluffs
Gilfillan, Earl E., Bloomfield
Gilfillan, Edwin O., Bloomfield
Gilfillan, Homer J., Jr., Bloomfield
Gillett, Francis A., Oskaloosa (L.M.)
Gillett, R. Giles, Sigourney
Gillies, Carl L., Iowa City
Gilloon, James R., Dubuque
Gingles, Earl E., Onawa
Ginzberg, Fanny T., Cherokee
Gittins, Thomas R., Sioux City
Gittler, Ludwig, Fairfield
Gius, John A., Iowa City
Givler, Robert L., Iowa City
Glascock, John C., Cedar Falls
Glesne, Otto N., Fort Dodge
Glissman, Jean B., Des Moines
Glomset, Daniel A., Des Moines
Goad, Robley R., Muscatine
Godbey, Maunis E., Cedar Rapids
Goddard, Chester R., Iowa City
Godfrey, James T., Jr., Cherokee
Goebel, Kenneth E., Council Bluffs
Goen, Edwin J., Charles City
Goenne, Richard E., Davenport
Goenne, William C., Sr., Davenport (L.M.)
Goerlich, Berthold, Elkins, West Virginia
Goggin, John G., Ossian
Goldberg, J. Eugene, Waterloo
Goldberg, Louis, Des Moines
Goldman, Bernard R., Davenport
Gonlubol, Fethi, Council Bluffs
Goodenow, Sidney B., Colo (L.M.)
Goodman, Lawrence O., Marshalltown
Goplerud, Clifford P., Iowa City
Gordon, Arnold M., Des Moines
Gorrell, Ralph L., Clarion
Gottsch, Erwin J., Shenandoah
Gould, James P., Des Moines
Gower, Walter E., Fort Dodge
Graether, John M., Marshalltown
Graham, James W., Sioux City
Graham, Thomas C., Iowa Falls
Grahek, Lawrence J., Oskaloosa
Grandinetti, Arthur F., Oelwein
Grandon, Eugene L., Cedar Rapids
Grant, John A., Ames
Grant, John G., Ames
Grau, Amandus H., Denison
Graves, John P., Dubuque
Gray, Gordon W., Davenport
Gray, Ralph E., Eldora
Gray, Lawrence R., Ankeny
Greco, Louis R., Jr., Boone
Green, Don C., Des Moines
Green, John W., Jr., Des Moines
Greenblatt, Jerald, Cedar Rapids
Greenhill, Solomon, Des Moines
Greenleaf, John S., Iowa City
Greteman, Theodore J., Dubuque
Griesy, Carl V., Rock Rapids
Griffin, Charles C., Dyersville
Griffin, Robert E., Sheldon
Griffith, William O., Council Bluffs
Griffith, Wylie H., Clinton
Groben, Elmer S., Columbus Junction
Grossman, Milton D., Sioux City
Grossman, Raymond S., Marshalltown
Grossmann, Edward B., Orange City
Grubb, Merrill W., Galva (L.M.)
Grundberg, Gerhard, Maquoketa
Gude, Herbert E., Iowa Falls
Guggenheim, Paul, Council Bluffs
Gugle, Lloyd J., Ottumwa
Guiang, Sixto F., Burlington
Gurau, Henry H., Des Moines
Gustafson, John E., Des Moines
Gutch, Roy C., Chariton (L.M.)
Gutenkauf, Charles H., Des Moines

Hach, Felix T., Ankeny
Hadlund, Ralph L., Waterloo
Hagen, Edward F., Decorah
Hagen, Edward J., Sioux City
Haines, Diedrich J., Des Moines
Hake, Dexter H., Palo Alto, California
Hale, Albert E., Mason City
Hall, William E., Des Moines
Hallam, F. Tulley, Des Moines
Hallberg, Harold C., Oelwein
Halpin, Lawrence J., Cedar Rapids
Hamilton, Ben C., Jefferson (L.M.)
Hamilton, Cecil V., Ames
Hamilton, Henry E., Iowa City
Hamilton, William K., Iowa City
Hammer, Richard W., Des Moines
*Hansell, William W., Des Moines
Hansen, David M., Cedar Falls
Hansen, Fred A., Red Oak
Hansen, Niels M., Mercer Island, Wash. (A.M.)
Hansen, Robert R., Marshalltown (L.M.)
Hansen, Russell R., Storm Lake
Hanson, Carl A., Waterloo
Hanson, Henry M., Waverly
Hanson, Walter N., Mason City
Hanssmann, Irving J., Council Bluffs
Hardin, John F., Bedford
Hardin, Robert C., Iowa City
Harding, Dale A., Eagle Grove
Hardwig, Oswald C., Waverly
Harken, Conreid R., Osceola (L.M.)
Harms, George E., Norway
Harned, Lewis B., Waterloo
Harper, George E., Fort Madison
Harper, Harry P., Fort Madison
Harper, William H., Jr., Keokuk

Harpring, Alice Jeanne, Davenport
Harris, Herbert H., Sioux City
Harris, Ray R., Dubuque (L.M.)
Harten, James N., Cherokee
Hartley, Byron D., Mount Pleasant
*Hartman, Frank T., Waterloo (L.M.)
Hartman, Howard J., Waterloo
Hartunian, Edick, Cedar Rapids
Harvey, Glen W., Cedar Rapids
Harwood, Arthur M., Waverly
Hassebroek, Roy J., Orange City
Hastings, Philip R., Waterloo
Hastings, Richard A., Ottumwa
Hathaway, Robert G., Waterloo
Hathaway, Walter R., Council Bluffs
Haufe, W. David, Bloomfield
Haugland, Stanley M., Lake Mills
Hausheer, Myron R., Oakley, Kansas
Havlik, Al J., Tama
Hawkins, Charles P., Clarion
Hayden, Milford D., Cherokee
Hayes, William P., Cedar Rapids
Hayne, Robert A., Des Moines
Hayne, Willard W., Des Moines
Hazlet, Kenneth K., Dubuque
Healy, James D., Mason City
Heeren, Ralph H., Des Moines
Heffernan, Chauncey E., Sioux City
Hege, John H., Mount Vernon
Hegg, Lester R., Rock Valley
Hegstrom, George J., Ames
Heidenreich, William F., Dubuque
Heimann, Verne R., Sioux City
Heine, George W., Cedar Falls
Heise, Harris R., Marshalltown
Heise, Robert H., Story City
Heitzman, Paul O., Cedar Rapids
Helling, Harry B., Fort Madison
Helseth, Carleton T., Sioux City
Henderson, Walker B., Oelwein
Hendricks, Atlee B., Davenport
Hendricks, Clifford A., Cedar Rapids
Hendricks, James Y., Clear Lake
Henkin, John H., Sioux City
Henn, Samuel C., Cedar Falls
Hennes, Raphael J., Oxford
Hennessey, John M., Manilla
Hennessy, J. Donald, Council Bluffs
Henningsen, Artemus B., Clinton
Henstorf, Harold R., Shenandoah
Heppelwhite, James W., Des Moines
Herlitzka, Alfred J., Mason City
Herman, John C., Boone
Herrick, Walter E., Ottumwa
Herrmann, Christian H., Middle
Hersey, Nelson L., Independence
Hertko, Edward J., Des Moines
Hess, John, Jr., Des Moines
Hess, John F., Dyersville
Heuermann, Dorothy J., Latimer
Heusinkveld, Henry J., Clinton (A.M.)
Hickerson, Otrie B., Independence
Hickman, Charles S., Centerville (L.M.)
Hicks, Wayland K., Sioux City
Hierschbiel, Ernst A., Iowa City
Hildebrand, Howard H., Ames
Hill, Julia Ford, Santa Barbara, Cal. (L.M.)
Hill, Lee F., Des Moines
Hines, Ralph E., Des Moines
Hirleman, Hal R., Cedar Rapids
Hirsch, Harry N., Sioux City
Hirsch, Michael R., Des Moines
Hirst, Donald V., Council Bluffs
Hoak, John C., Iowa City
Hockmuth, Richard E., Marshalltown
Hodges, Robert E., Iowa City
Hoffman, Paul M., Tipton (L.M.)
Hoffman, Robert W., Des Moines
Hogenson, George B., Eagle Grove
Hollander, Werner M., Davenport
Hollis, Edward L., Marengo (L.M.)
Holman, David O., Ottumwa
Holzworth, Paul R., Des Moines
Hommel, Placido R. V., Elkader
Honke, Edward M., Sioux City
Hooley, John S., Sigourney
Hoover, Ralph S., Waterloo
Hopkins, David H., Des Moines (A.M.)
Hopp, Ralph L., Council Bluffs
Hornaday, William R., Des Moines
Hornaday, William R., Jr., Des Moines
Hornberger, H. Richard, Des Moines
Hornberger, John R., Manning
Horsley, Arthur W., Sioux City
Horst, Arthur W., Sioux City
Hosford, Horace F., Burlington
Hostetter, John I., Des Moines
Hostetter, Mary Sparks, West Des Moines
Houlahan, Jay E., Mason City
Houser, Cass T., Cedar Rapids (L.M.)
Hausholder, Harold A., Winthrop (L.M.)
Howar, Bruce F., Webster City
Howard, Dwayne E., Sioux City
Howard, Lloyd G., Council Bluffs
Howard, William F., Iowa City
Howe, Gerald W., Iowa City
Howell, David A., Dubuque
*Howell, Elias B., Ottumwa (L.M.)
Hoyt, John L., Creston
Hruska, Glen J., Belmond
Huber, Robert A., Charter Oak
Huber, Robert H., Charles City
Hubiak, John, Odebolt
Hudek, Joseph W., Garnavillo (L.M.)
Huey, John R., Cedar Rapids
Huff, Dale S., Iowa City
Huffman, William C., Iowa City
Hughes, Parker K., Des Moines
Hull, Charles N., Des Moines
Hull, Gene I., Des Moines
Hunt, Van W., Mason City
Hunting, Ralph D., Cedar Rapids
Huntley, Charles C., Avoca
Hurevitz, Hyman M., Davenport
Huston, John, Cedar Rapids
Huston, Marshall D., Cedar Falls
Huston, Paul E., Iowa City
Hutcheson, Thomas S., Ida Grove
Hutchinson, Roy M., Fort Dodge
Hyatt, Charles N., Corydon

Ingham, Paul G., Mapleton
Ingle, Newell G., Cedar Rapids
Ingraham, David R., Sewal (L.M.)
Ireland, William W., Ottumwa
Irish, Thomas J., Forest City
Irish, Tom J., Jr., Forest City
Irving, Noble W., Jr., Des Moines
Isham, Robert B., Osage

Jack, Darwin B., Oelwein
Jackson, James S., Mount Pleasant
Jacobi, Heinz S., New Hampton
Jacobs, Carl A., Sioux City
Jacobs, Edward L., Marshalltown
Jacobs, James P., Iowa City
Jacobs, John P., Mason City
Jacobs, Richard L., Iowa City
Jacques, Lewis H., Iowa City
Jaenicke, Kurt, Clinton (L.M.)
Jaggard, Robert S., Oelwein
James, David W., Des Moines
January, Lewis E., Iowa City
Jaquis, John R., Cedar Falls
Jardine, George A., New Virginia (A.M.)
Jarvis, Harry D., Chariton (L.M.)
Jaskunas, Stanley R., Bloomfield
Jauch, Karl E., La Porte City
Jeffries, James H., Waterloo
Jeffries, Milo E., Marshalltown
Jeffries, Roy R., Waukon
Jenkins, George D., Burlington
Jenkins, Hanley F., Des Moines
Jenkins, Richard L., Iowa City
Jenkinson, Harry R., Iowa City
Jenks, Alonzo L., Jr., Des Moines
Jensen, Arno L., Clinton
Jensen, Kenneth V., Clarinda
Jensen, LeRoy E., Audubon
Jerdee, Ingebrecht C., Clermont
Jerome, Peter, Davenport
Johann, Albert E., Des Moines (A.M.)
Johnson, Aaron Q., Sioux City
Johnson, Charles A., Sioux City
Johnson, Charles O., Des Moines
Johnson, Clarence A., Coon Rapids
Johnson, Eugene L., Spirit Lake
Johnson, G. Raymond, Ottumwa
Johnson, Harvey A., Atlantic
Johnson, Merton A., Nevada
Johnson, Norman M., Clarinda
Johnson, Richard M., Denison
Johnson, Robert J., Iowa Falls
Johnson, Robert M., Des Moines
Johnson, Wendell A., Ames
Johnston, C. Harlan, Des Moines
Johnston, George B., Estherville
Johnston, Harry L., Ames
Johnston, Helen, Sun City, Calif. (A.M.)
Johnston, Wayne A., Dubuque (A.M.)
Jones, Clare C., Spencer
Jones, G. William, Des Moines
Jones, Harry J., Cedar Rapids (L.M.)
Jones, Maynard L., Colfax
Jongewaard, Albert J., Jefferson
Jongewaard, Robert E., Wesley
Joranson, Robert E., Council Bluffs
Jordan, John W., Maquoketa
Jowett, John R., Clinton
Joyce, George T., Mason City
Joynt, Albert J., Waterloo (L.M.)
Joynt, Michael F., Marcus (L.M.)
Joynt, Robert J., Iowa City
Judiesch, Kenneth J., Iowa City
Judisch, George F., Iowa City
Juel, Einer M., Atlantic

Kaack, Harry F., Jr., Clinton
Kaelber, William W., Iowa City
Kahler, Hugo V., Reinbeck (L.M.)
Kane, Thomas E., Boone
Kanealy, John F., Cedar Rapids
Kanis, Stewart F., Pella
Kapke, Franklin W., Mason City
Kaplan, David D., Sioux City
Kaplan, Robert M., Davenport
Kapp, David F., Dubuque
Karp, Leon M., Lake Citiy
Kasiske, Walter B., Keokuk
Kast, Donald H., Des Moines
Katzmann, Frederick S., Des Moines
Kaufmann, Robert J., Pago Pago, Samoa
Keane, Kenneth M., Sioux City
Keech, Roy K., Cedar Rapids (L.M.)
Keeney, George H., Mallard (L.M.)
Keettel, William C., Iowa City
Kehoe, Joseph L., Davenport
★Keil, Philip G., Washington, D. C.
Keith, John J., Marion
Kelberg, Melvin R., Sioux City
Keller, Erwin F., Davenport
Keller, John T., Iowa City
Kelley, John H., Des Moines
Kelley, Newell R., Des Moines
Kelly, Alma Catherine B., Des Moines
Kelly, Anthony H., Sioux City
Kelly, Clarkson L., Jr., Charles City
Kelly, Dennis H., Des Moines (A.M.)
Kelly, Dennis H., Jr., Des Moines
Kelly, John F., Sioux City
Kelly, John F., Fort Dodge
Kelly, William J., Dubuque
Kelsey, James E., Des Moines
Kemp, Robert R., Keokuk
Kendall, Tom E., Des Moines
Kenefick, John N., Algona
Kennedy, Edwin D., Mason City
Kennedy, Elizabeth Smith, Oelwein (L.M.)
Kenney, Bernard E., Council Bluffs
Kent, Robert W., Oakdale
Kent, Thomas H., Iowa City
Keohen, Gerald F., Dubuque
Kepros, Peter F., Cresco
Kern, George A., Des Moines
Kern, Lester C., Waverly (L.M.)
Kershner, Frank O., Clinton (A.M.)
Kersten, Herbert H., Fort Dodge
Kersten, John R., Fort Dodge
Kersten, Paul M., Fort Dodge
Kestel, John L., Waterloo
Kettelkamp, Enoch G., Monona
Kettelkamp, William E., Cedar Rapids
Keyser, Earl L., Marshalltown
Keyser, Ralph E., Marshalltown (L.M.)
Kieck, Ernest G., Etowah, N. Carolina (A.M.)
Kiernan, Thomas E., Sioux Center
Kiesau, Milton F., Postville
Kiesling, Harry F., Lehigh
Kilgore, Ben F., Des Moines
Kimball, Glenn J., Des Moines
Kimball, John E., West Liberty (L.M.)
Kimberly, Lester W., Davenport
King, Jack A., Ames
King, Ross C., Clinton
Kingsbury, Kenneth R., Ottumwa
Kinney, Max W., Council Bluffs
Kirch, Walter A., Des Moines
Kirkegaard, Virgil G., Coralville
Kirkendall, Walter M., Iowa City
Kirkham, Lindsay J., Mason City
Kirlin, Maurice W., Spirit Lake
Kivlighn, Donald D., Sioux City
Klein, John L., Jr., Muscatine
Klein, Robert F., Muscatine
Kleinberg, Henry E., Des Moines (A.M.)
Klingle, Francis L., Cresco
Klocksiem, Harold L., Des Moines
Klocksiem, Roy G., Rockwell City
Klok, George J., Council Bluffs
Kluever, Herman C., Fort Dodge
Klumper, Wilhelm, Cherokee
Knaack, Harvey E., Des Moines
Knight, Benjamin L., Cedar Rapids
Knight, Edson C., Marshalltown
Knight, Russell A., Rockford
Knipfer, Robert L., Jesup
Knosp, Alton A., Jefferson

Knosp, Norman C., Belle Plaine
Knott, James L., Council Bluffs
Knott, Peirce D., Sioux City
Knox, Robert M., Des Moines
Koch, John S., Cedar Rapids
Koelling, Lloyd H., Newton
Koenig, Frank J., Des Moines
Kohrs, Edward F., Davenport
Koob, Dean F., Algona
Koons, Claude H., Des Moines
Kopecky, Edward F., Cedar Rapids
Kopsa, Walter J., Tipton
Kordecki, Frank A., Independence
Korner, Harold, Waterloo
Korns, Horace M., Iowa City
Korns, Michael, Iowa City
Korson, Selig M., Independence
Kos, Clair M., Iowa City
Koser, Donald C., Cherokee
Kosieradzki, Henry, Marshalltown
Kraushaar, Maurice E., Fort Dodge
Krehl, Willard A., Iowa City
Kretzschmar, Robert M., Iowa City
Krettek, John E., Council Bluffs
Krigsten, Joe M., Sioux City
Krigsten, William M., Sioux City
Kroack, Kalman J., Buffalo Center
Kruckenberg, William G., Cedar Rapids
Krueger, Norman L., Casey
Kruml, Joseph G., Council Bluffs
Kruse, Otto E., Tipton
Kruse, Rolf F., Waterloo
Kruse, Rufus H., Marshalltown
Kruse, Steven G., Slater
Kuehn, Willard G., Clarinda
Kuhl, Augustus B., Jr., Davenport
Kuhl, Robert H., Creston
Kuker, Leo H., Carroll
Kurtz, Cecilia M., Cedar Rapids
Kuska, Harry D., Ottumwa
Kyle, Robert H., Cedar Falls
Kyle, William S., Washington (L.M.)

Lackore, Leonard K., St. Ansgar
Lagen, Mansfield S., Dubuque
Lagoni, Ralph P., Eldridge
Lake, Carlton B., Cedar Rapids
LaMar, John W., Des Moines
Lamb, Harry H., Davenport
Lambrecht, Paul B., Des Moines
Landhuis, Leo R., Fort Dodge
Landry, Gerard R. F., Council Bluffs
Lanich, Oscar K., Jr., Waterloo
Lannon, James W., Mason City
LaPorte, Paul A., Fort Dodge
Larimer, Robert C., Sioux City
Larimer, Robert N., Sioux City
Larsen, Elmer A., Centerville
Larsen, Frank S., Fort Dodge
Larsen, Lawrence V., Harlan
Larson, Andrew G., Dickens (L.M.)
Larson, Carroll B., Iowa City
Larson, Erling, Jr., Davenport
Larson, Gerald E., Elk Horn
Larson, Lester E., Decorah
Larson, Marvin O., Hawarden
Larson, Robert C., Des Moines
Larson, Walter W., Ames
Latchem, Charles W., Des Moines
Latimer, Milton J., Burlington
Latourette, Howard B., Iowa City
Laube, Paul J., Dubuque
Lauvstad, Edward E., Osceola
Lavender, John G., George
Lawler, Matthew P., Jr., Des Moines
Lawlor, Jeremiah F., Iowa City
Lawrence, Montague S., Iowa City
Lawson, Frank D., Fort Dodge
Layton, Jack M., Iowa City
Ledogar, Joseph A., Webster City
Lee, Richard H., Dubuque
Lee, Robert W., Fort Dodge
Lee, Wayne R., Burlington
Leehey, Paul J., Independence
Leffert, Frank B., Centerville
Lehman, Emery W., Bluffton, Indiana (L.M.)
Lehr, Sylvan M., Cedar Rapids
Leibel, Lynn L., Council Bluffs
Leinbach, Samuel P., Belmond
Leinfelder, Placidus J., Iowa City
Leiter, Herbert C., Sioux City
Lekwa, Alfred H., Story City
Lemke, Betty A. T., Des Moines
Lemon, Kenneth M., Oskaloosa
Lenzmeier, Albert J., Davenport
Leonard, Thurman K., Madrid
LePoidevin, Jean S., Waterloo
Lerner, Ernest N., Mount Pleasant
Lesiak, John J., Titonka
Levy, James W., Sioux City
Lewis, Faye C., Webster City
Lewis, William B., Webster City
Lichtenberg, Robert P., Keokuk
Liechty, Richard D., Iowa City
Lierle, Dean M., Iowa City
Lierman, Clifford E., Lake View
Light, Henry R., Grinnell
Lim, Eleuterio G., Mason City
Limbert, Edwin M., Council Bluffs
Lindell, Sherman E., LeMars
Linder, Enfred E., Ogden
Lindholm, Claire V., Armstrong
Lindholm, Hugo A., Estherville
Lindley, Ellsworth L., Cedar Rapids
Linford, Joel M., Des Moines
Linge, Scott, Fayette
Linthacum, Robert W., Dysart
Liska, Edward J., Ute
Lister, Eugene E., Dallas Center
Lister, Kenneth E., Ottumwa
Llewellyn, Neal N., Iowa City
Lloyd, John M., Washington
Locher, Robert C., Cedar Rapids
Locksley, Herbert B., Iowa City
Loeck, John F., Independence
Loeffelholz, Paul L., Eagle Grove
Loes, Anthony M., Dubuque (L.M)
Lohman, Frederick H., Waterloo
Lohmann, Carl J., Burlington
Lohnes, John H., Cedar Rapids
Lohr, Frederick J., Sioux City
Lohr, Phillips E., Churdan
Long, Draper L., Mason City
Longnecker, Daniel S., Iowa City
Longworth, Wallace H., Boone
Looker, Richard F., Cedar Rapids
Loomis, Frederic G., Waterloo
Lopez, Thomas, Farmington
Lorfeld, Gerhard W., Davenport
Losh, Clifford W., Jr., Des Moines
Losasso, David A., Davenport
Lovejoy, E. Parish, Des Moines
Lowary, Eldon K., Webster City
Lowry, Charles F., Council Bluffs
Lowry, Earl C., Des Moines
Loxterkamp, Edward O., Rolfe
Ludwig, Clarence J., Waterloo
Luehrsmann, Bernard C., Dyersville
Luhman, Lowell A., Iowa City
Lulu, Donald J., Des Moines
Lund, Axel T. J., Ackley
Lyons, Mary Louise, Des Moines

MacGregor, John K., Mason City
MacLeod, Hugh C., Greene
MacQueen, John C., Iowa City
McAllister, William G., Manly
McBride, Donald F., Des Moines
McBride, Robert H., Sioux City
McCaffrey, Eugene H., Des Moines (A.M.)
McCall, John H., Allerton (L.M.)
McCarroll, James G., Fort Dodge
McCarthy, Frank D., Sioux City
McClean, Earl D., Des Moines (L.M.)
McClellan, John W., Onawa
McClung, Robert R., Knoxville
McClurg, Frank H., Fairfield
McConkie, Edwin B., Cedar Rapids
McConnell, Robert W., Davenport
McCool, Robert F., Clarion
McCormack, William C., Ames
McCoy, Harold J., Des Moines
McCoy, John T., Cedar Falls
McCoy, Robert E., Mason City
McCrary, W. Ashton, Lake City
McCreedy, Murry L., Washington
McCreight, George C., Carmel Valley, Cal. (A.M.)
McCuistion, Harry M., Sioux City
McDonald, Don J., Cedar Rapids
McEleney, Donald A., Cedar Rapids
McElwain, John J., Burlington
McFadden, F. Ross, Davenport
McFarland, Guy E., Jr., Ames
McFarland, Julian E., Ames (A.M.)
McFarlane, Donald J., Dubuque
McFarlane, John A., Sioux City
McGarvey, Cornelius J., Des Moines
McGee, John E., Fort Madison
McGilvra, Arthur L., Sioux Center
McGinnis, George C., Fort Madison
*McGrane, Merle J., New Hampton (A.M.)
McGuire, Kenneth L., Keota
McHugh, Charles P., Ft. Lauderdale, Fla. (L.M.)
McIllece, Raymond C., Fort Madison
McIntosh, Philip D., Ottumwa
McIntyre, Caryl, C., Waterloo
McKay, Kenneth H., Davenport
McKay, Richard V., Jr., Dubuque
McKean, Frank F., Allison
McKee, Albert P., Iowa City
McKeever, Earl J., Knoxville
McKitterick, John C., Burlington
McLaughlin, Philip A., Coralville
McMahon, Arthur E., Jr., Mason City
McMahon, Thomas, Clinton (L.M.)
McMeans, Thomas W., Davenport
McMillan, George J., Fort Madison
McMillan, James T., III, Des Moines
McMurray. Edward A., Newton
McMurray, Harry N., Burlington
McNamara, Robert J., Dubuque
McNamee, Jesse H., Des Moines
McQuiston, J. Stuart, Cedar Rapids
McTaggart, William B., Fort Dodge
McVay, Melvin J., Lake City

Magaret, Ernest C., Glenwood
Magee, Emery E., Waterloo (L.M.)
Maher, Louis L., Des Moines
Mahoney, James D., Council Bluffs
Mailliard, Robert E., Storm Lake
Maixner, William D., Ottumwa
Maland, Donald O., Cresco
Maltry, Emile, Jr., Fort Dodge
Maly, Ronald F., Des Moines
Manderscheid, Robert A., Boone
Mangan, J. Thomas, Forest City
Manning, Ephraim L., Davenport
Maplethorpe, Charles W., Toledo (L.M.)
Maplethorpe, Charles W., Jr., Toledo
Marble, Edwin J., Marshalltown
Marble, Willard P., Marshalltown
Margolis, Irving B., Des Moines
Margules, Maurice P., Council Bluffs
Margulies, Harold, APO, New York
Marinos, Harry G., Mason City
Maris, Cornelius, Sanborn
Mark, Edward M., Clarksville
Mark, Milton S., Des Moines
Marker, John I., Davenport
Markham, William S., Harlan
Marme, George W., DeWitt
Marquis, Fred M., Waterloo
Marquis, George S., Des Moines
Marriott, Charles M., Sioux City
Marsh, Frederick E., Council Bluffs
Marsh, Frederick E., Jr., Council Bluffs
Marshall, Lawrence L., Jefferson
Martin, James W., Holstein
Martin, Josef R., Carroll
Marty, Sophocles D., Mason City
Mason, Edward E., Iowa City
Mast, Truman M., Washington
Mater, Dwight A., Knoxville
Mathiasen, Emmett B., Council Bluffs
Mathiasen, Henning W., Council Bluffs
Mathiasen, John W., Council Bluffs
Matthews, Alexander, Des Moines
Matthey, Carl H., Davenport
Matthey, Walter A., Bettendorf (L.M.)
Mattice, Roger J., Sioux Rapids
Maughan, John F., Baxter
Maxwell, Charles T., Sioux City (L.M.)
Maxwell, John R., Iowa City
May, George A., Forest Grove, Oregon (A.M.)
May, J. T., Cherokee
Mazur, Theodore T., Burlington
Meffert, Clyde B., Cedar Rapids
Meger, Gene E., Cedar Rapids
Meger, Robert F., Victor
Megorden, William H., Mount Pleasant
Mehrl, William J., Cascade
Melampy, C. Nelson, Ottumwa
Melgaard, Robert T., Dubuque
Mellen, Robert G., Clinton
Merchan, Gloria, Des Moines
Merkel, Byron M., Des Moines
*Merritt, Arthur M., Des Moines (L.M.)
Merritt, F. Benjamin, Dubuque
Merritt, James O., Des Moines
Merillat, Herbert C., Des Moines
Merselis, Harold K., Audubon
Merulla, Charles A., Marion
Meservey, Maynard A., Jr., Des Moines
Metzner, Franz N., Dubuque
Meyer, Alfred K., Clinton
Meyer, Robert J., Wellsburg
Meyers, Frank W., Dubuque (L.M.)
Meyers, Paul T., Bloomfield
Meyers, Robert P., Ottumwa
Michaelson, Beryl F., Dakota City
Michaelson, Manly, Bellevue
Michel, Gene E., Sac City
Michelfelder, Theodore J., Fort Dodge
Middleton, William H., Cedar Rapids

Mikelson, Clarence J., Waterloo
Miller, Chester I., Iowa City
Miller, Donald F., Williamsburg
Miller, Enos D., Wellman (L.M.)
Miller, Garfield, Calmar
Miller, Herbert P., Jr., Rockford, Illinois
Miller, Howard L., Cedar Rapids
Miller, Jay R., Wellman
Miller, Lawrence A., North English
Miller, Lawrence A., II, North English
Miller, Richard L., Waterloo
Miller, Robert C., Waterloo
Miller, Rodney H., Sac City
Miller, Temple M., Muscatine
Mills, Keith F., Lone Tree
Mills, Stanley D., Iowa City
Miltner, Leo J., Davenport
Minassian, Thaddeus A., Des Moines (L.M.)
Mincks, James R., Bloomfield
Mintzer, Albert J., Des Moines
Mirick, Donald F., Clinton
Mitchell, Claire H., Cincinnati (L.M.)
Mitchell, Duane E., Mount Ayr
Mitchell, Richard C., Waterloo
Moberly, John W., Dubuque
Mochal, John L., Independence
Modaff, Walter L., Des Moines
Moeller, Jay A., Dubuque
Moen, Stanley T., Cedar Rapids
Moermond, James O., Buffalo Center
Moershel, Henry G., Homestead
Moershel, William J., Cedar Rapids
Moes, John R., Waterloo
Moessner, Harold, Amana
Moles, Marvin R., Newton
Monahan, Joseph L., Clinton
Monnig, Philip J., Sioux City
Montgomery, George E., Ames
Montgomery, Guy E., Washington
Montz, Fred, Lowden
Moon, Barclay J., Scottsdale, Ariz. (A.M.)
Mooney, James C., Des Moines
Moore, Carlyle C., Emmetsburg
Moore, Edson E., Fort Dodge
Moore, Jesse C., Vinton (L.M.)
Moore, Pauline V., Iowa City
Moore, Richard J., Independence
Moore, Richard M., Des Moines
Moorehead, Harold B., Underwood (L.M.)
Mordaunt, Richard H., Nevada
Morgan, Dale D., Marion
Morgan, Francis W., Ottumwa
Morgan, Harold W., Mason City
Morgan, Jack N., Fairfield
Morgan, Paul W., Mason City
Morgan, Rex L., Sioux City
Morganthaler, Otis P., Templeton (L.M.)
Moriarty, Darwin L., Council Bluffs
Morrison, John R., Des Moines
Morrison, Robert E., Waterloo
Morrison, Roland B., Carroll
Morrissey, George E., Davenport
Morrissey, William J., Des Moines
Mosher, Martin L., Jr., Iowa City
Motto, Edwin A., Davenport
Mountain, George E., Des Moines
Moyers, Jack, Iowa City
Mugan, Robert C., Sioux City
Mulsow, Frederick W., Cedar Rapids
Mumford, Earl M., Sioux City
Munger, Elbert E., Jr., Spencer
Munns, Richard E., Hampton
Murphey, Arlo L., Fredericksburg
Murphy, Cornelius B., Alton
Murphy, George C., Waterloo
Murphy, Robert E., Fort Madison
Murphy, Thomas W., Cedar Rapids
Murray, Frederick G., Ames (L.M.)
Murray, Jonathan H., Burlington
Murtaugh, James E., New Hampton
Myerly, William H., Des Moines
Myers, Frank L., Madison, Wisconsin
Myers, Kermit W., Sheldon
Myers, Robert W., Monticello

Nafziger, Ezra G., Battle Creek
Nakashima, Victor K., Dubuque
Nash, Warren, Waterloo
Neal, Emma J., Cedar Rapids (L.M.)
Needles, Roscoe M., Atlantic
Neff, Herbert, Guthrie Center
Neglia, Fortunato J., Maxwell
Neligh, Gordon L., Jr., Council Bluffs
Nelken, Leonard, Clinton
Nelson, Arnold L., Des Moines
Nelson, F. Lawrence, Ottumwa
Nelson, Frank F., Decorah
Nelson, Herbert L., Iowa City
Nelson, James W., Newton
Nelson, Leo C., Jefferson
Nemec, Joseph J., Cedar Rapids
Nemmers, Gerald J., Washington
Nemmers, Julian G., Dubuque
Nessa, Curtis B., Burlington
Netolicky, Robert Y., Cedar Rapids
Neuzil, William J., Cedar Rapids (L.M.)
Neville, Edwin C., Iowa City
Newland, Don O., Des Moines
Nickol, Joan B., Cedar Rapids
Nicoll, Charles A., Panora
Niedermeyer, Ernst F. L., Iowa City
Nielsen, Arnold T., Ankeny
Nielsen, Glen E., Des Moines
Nielsen, Raymond M., Charles City
Nielsen, Rudolph F., Cedar Falls
Nierling, Paul A., Cresco
Nitzke, Everett A., Des Moines
Niver, Edwin O., Clarinda
Noble, H. Dudley, Davenport
Noble, Nelle S., Des Moines (L.M.)
Noble, Rusl P., Alta
Nolan, John C., Corning
Nord, Donald H., Cambridge
Nordin, Charles A., Des Moines
Nordschow, Carleton D., Iowa City
Norris, Albert S., Iowa City
Norris, Lewis D., Newton
Northup, Maurice L., Humboldt
Noun, Louis J., Des Moines
Noun, Maurice H., Des Moines
Nyquist, David M., Eldora

Ober, Frank G., Burlington
O'Brien, Lyal J., Fort Dodge
O'Brien, Stephen A., Mason City (L.M.)
O'Brien, Stephen A., Mason City
O'Conner, Edwin C., New Hampton
O'Donnell, Joseph E., Clinton
Oelrich, Carl D., Sioux Center
Oestreicher, Harry, Independence
*Oggel, Herman D., Waterloo (L.M.)
O'Keefe, Paul T., Waterloo
O'Leary, Francis B., Sibley
Olin, Elvin E., Dubuque
Olsen, Dennis R., New Hampton
*Olsen, Martin I., Des Moines (L.M.)
Olsen, Max E., Minden
Olsen, Ranald E., Muscatine
Olson, Stewart O., Des Moines
O'Neal, Harold E., Tipton
Onnen, Dale R., Newton
Orcutt, Paul E., Marion
Orelup, Don N., Albia
Ortiz Rafael I., Des Moines
Ortmeyer, Donald W., San Rafael, Calif.
Orton, Lawrence C., Mason City
Orvis, Roger C., Dubuque
Osborn, C. Robert, Dexter
Osincup, Paul W., Sioux City
Osten, Burdette H., Northwood
O'Toole, Laurence C., LeMars
Ott, Roger A., Dubuque
Ottilie, Donald J., Oelwein
Otto, Paul C., Fort Dodge
Overton, Roy W., Des Moines
Owca, Anthony S., Centerville
Owen, William E., St. Ansgar
Ozaydin, Ismail M., Council Bluffs

Packard, Douglas K., Dubuque
Paige, Ralph T., LaPorte City
Palmer, Carson W., Guttenberg (A.M.)
Palmer, Howard C., West Liberty
Palmer, Russell H., Postville
Palumbo, Louis T., Des Moines
Pansegrau, Duane, Iowa City
Paragas, Modesto R., Creston
Parish, John R., Grinnell
Parish, Havner H., Sioux City
Parke, John, Cedar Rapids
Parker, Loran F., Iowa Falls
Parker, Robert L., Des Moines (L.M.)
Parks, Claude O., Iowa City
Parks, John L., Muscatine
Parson, Victor G., Des Moines
Parsons, Earl, Burlington
Parsons, John C., Des Moines
Paschal, George A., Webster City
Pascoe, Paul L., Carroll
Pasterak, George E., Mount Pleasant
Patterson, Fred E., Iowa City
Patterson, Robert K., Conrad
Patterson, Roy A., Webster City
Paul, Jed, Creston
*Paul, John D., Anamosa
Paul, Richard E., Des Moines
Paul, William D., Iowa City
Paulsen, Donald A., Cedar Rapids
*Paulsen, Herbert B., Harris
Paulson, Jerome F., Mason City
Paulus, Edward W., Iowa City
Pearlman, Leo R., Des Moines
Pearson, George J., Burlington
Peasley, Harold R., Des Moines
Pedersen, Arthur M., Council Bluffs
Peisen, Conan J., Des Moines
Pelz, Werner P., Charles City
Penly, Don H., Cedar Falls
Perel, Ada R., Des Moines
Perkins, Franklyn C., Hedrick
Perkins, Rollin M., Davenport
Perley, Arthur E., Waterloo
Perret, George, Iowa City
Perrin, William D., Sumner
Perry, Henry M., Bloomfield
Pester, George H., Council Bluffs
Petersen, Donal C., Burlington
Petersen, Emil C., Atlantic
Petersen, Millard T., Atlantic
Petersen, Robert E., Dubuque
Petersen, Vernon W., Clinton
Peterson, Byron E., Mount Pleasant
Peterson, Charles R., Des Moines
Peterson, Elroy R., Ames
Peterson, Evan A., Burlington
Peterson, Frank R., Cedar Rapids
Peterson, John C., Hartley
Peterson, Loren G., Des Moines
Peterson, Magnus, Cherokee
Peterson, Ray W., Clear Lake
Peterson, Richard E., Iowa City
Peterson, Richard J., Panora
Petrikonis, Joseph, Woodbine
Pettipiece, Clayton, Shenandoah
Pfaff, Robert A., Dubuque
Pfeiffer, Donald W., McGregor
Pfeiffer, Harry E., Riviera Beach, Fla. (L.M.)
Pfohl, Anthony C., Dubuque
Phelan, Mary Patricia, Altoona
Phelps, Gardner D., Waterloo
Phelps, Richard E. H., New Sharon
Pheteplace, Willard S., Davenport
Phillips, Allan B., Des Moines
Phillips, Clarence P., Muscatine
Phillips, Walter B., Montezuma
Piburn, Marvin F., Salisbury, South Rhodesia, Africa
Piekenbrock, Frank J., Dubuque
Piekenbrock, Thomas C., Dubuque
Piercy, Kenneth C., Ames
Pierson, Lawrence E., Sioux City
Pietrzak, Julius, Cedar Rapids
Ping, Er Chang, Woodward
Pitcher, Arlo L., Belmond
Pitluck, Harry L., Laurens
Plager, Vernon H., Waterloo
Plankers, Arthur G., Dubuque
Plott, Carol L., Algona
Poepsel, Frank L., West Point
Polich, John J., Des Moines
Polit, Jaime, Fort Madison
Ponseti, Ignacio V., Iowa City
Poore, Samuel D., Villisca
Porter, Lawrence W., Indianola
Porter, Philip M., New Hampton
Porter, Richard C., Des Moines
Porter, Robert J., Des Moines
Porter, S. Dale, Grinnell
Porter, Samuel D., Grinnell
Posner, Edward R., Jr., Des Moines
*Posner, Edward R., Sr., Des Moines (L.M.)
Potter, Paul H., Mason City
Powell, Adrian R., Elkader
Powell, Robert M., Mason City
Powell, Robert V., Kingsley
Powers, George H., Shenandoah
Powers, Henry R., Emmetsburg
Powers, Ivan R., Waterloo
Powers, John L., Estherville
Powers, William J., Iowa City
Preacher, Charles B., Bettendorf
Preece, Wade O., Waterloo
Prescott, Kenneth H., Storm Lake
Presnell, William H., Charlotte
Prewitt, Leland H., Ottumwa
Pribram, Henry, Iowa City
Priestley, Joseph B., Des Moines
Proctor, Rothwell D., Cedar Rapids
Proffitt, Gail A. McClure, Ames
Prouty, James V., Cedar Rapids
Province, William, Jr., Dubuque
Ptacek, Joseph L., Webster City
Pugh, Philip F. H., Sioux City
Pumphrey, Loira C., Keokuk
Puntenney, Andrew W., Boone
Purdon, Thomas F., Iowa City
Purdy, William O., Des Moines
Purnell, Glenn B., Des Moines

Quetsch, Richard M., Cedar Rapids

Radcliffe, Christian E., Iowa City
Radicia, Lucy M., Council Bluffs
Rahn, Gordon E., Mount Vernon
Rainy, Curtis W., Elma
Ralston, Furman P., Knoxville
Ramsaran, James P., Patton, California
Ramsey, Warne F., Bettendorf
Randall, Ross G., Waterloo
Randall, William L., Hampton
Randolph, Aaron P., Anamosa
Rankin, Harold C., Mount Pleasant
Rankin, John R., Keokuk
Rankin, William, Keokuk (L.M.)
Ransom, James H., Grinnell
Rapagnani, Joseph A., Indianola
Rassekh, Hormoz, Council Bluffs
Rater, David L., Ottumwa
Rathe, Herbert W., Waverly
Rathe, James W., Waverly
Rausch, Gerald R., Sioux City
Ravreby, Mark D., Des Moines
Read, Charles H., Iowa City
Reading, Donald S., Marshalltown
Readinger, Harry M., New London
Redfield, Earl L., Des Moines
Redmond, James J., Cedar Rapids
Reed, Robert J., Des Moines
Reeder, James E., Sr., San Diego, Calif. (L.M.)
Reeder, James E., Jr., Sioux City
*Reedholm, Edwin A., Grundy Center
Reeves, Lane A., Columbia, Missouri
Regnier, Walter O., Mount Pleasant
Reibold, Frank W., Carroll
Reinertson, Jim W., Cedar Rapids
Rembolt, Raymond R., Iowa City
Rence, William G., Mason City
Reque, David G., Cedar Rapids
Reuber, Roy N., Mason City
Reuling, Frank H., Waterloo
Rhodes, John M., Pocahontas
Richard, Clysta A., Des Moines
Richey, Granville L., Centerville
Richmond, Arthur C., Fort Madison
Richmond, Frank R., Fort Madison
Richmond, Frank R., Jr., Fort Madison
Richmond, Paul C., New Hampton
Richter, Harold J., Albia
Ridenour, Edward J., Waterloo
Riecke, William C., Des Moines
Riegelman, Ralph H., Des Moines
Rieniets, John H., Cedar Rapids
Rindskopf, Wallace, Des Moines
Rinella, John L., Des Moines
Ringdahl, Irving, Elkader
Rise, Edwin N., Iowa City
Ritter, Eugene F., Centerville
Robb, William C., Fort Dodge
Robb, William J., Cedar Rapids
Roberts, C. Ronald, Dysart
Roberts, Justus B., Ottumwa
Roberts, Richard W., Des Moines
Robertson, Treadwell A., West Liberty
Robinson, Beverly, Des Moines
Robinson, Ray G., State Center
Robinson, Van C., Des Moines
Robison, Harry V., Sioux City
Rock, J. Gordon, Davenport
Rock, John E., Bettendorf
Rock, William K., Waterloo
Rockwell, Maryelda, Clinton
Rodabaugh, Kenneth D., Tabor
Rodawig, Donald F., Spirit Lake
Rodawig, Donald F., Jr., Spirit Lake
Roddy, Harold J., Mason City
Rogers, Claude B., Earlville (L.M.)
Rohlf, Edward L., Jr., Waterloo
Rohrbacher, William M., Iowa City
Rohwer, Roland T., Sioux City
Rolfs, Floyd O., Parkersburg
Rolfs, Fred A., Aplington
Roller, Gilbert J., Iowa City
Romano, Anthony M., Neola
Rominger, Clark R., Waukon
Rooney, Joseph M., Algona
Rose, Alvin A., Story City (L.M.)
Rose, Joseph E., Grundy Center
Rosebrook, Lee E., Ames
Rosenberg, Harlan K., Iowa City
Rosendorff, Charlotte, Davenport
Ross, Arthur J., Jr., Perry
Rost, Glenn S., Lake City
Rotkow, Maurice J., Des Moines
Roudybush, William, Muscatine
Roules, J. Frederic, Mediapolis
Roverud, Eleanor, Carroll
Rovine, Byron W., Davenport
Rowley, Robert D., Burlington
Rowley, William G., Sioux City (L.M.)
Rowney, George W., Sioux City
Royal, Malcolm A., Des Moines (L.M.)
Rozeboom, Earl G., Winterset
Rudersdorf, Howard E., Sioux City
Rusk, Ross P., Dubuque
Russell, Elwood P., Burlington
*Russell, John R., Santa Barbara, Calif. (L.M.)
Russell, Ralph E., Waterloo (L.M.)
Rust, Emery A., Webb (L.M.)
Ruth, Verl A., Des Moines
Ryan, Allen J., Harlan
Ryan, James W., Jr., Des Moines
Ryan, Robert A., Fairfield

Saar, Jesse L., Donnellson (L.M.)
Saar, Jesse L., Jr., Burlington
Saar, John W., Keokuk
Safley, Max W., Forest City
Safranek, Edward J., Fort Dodge
Sahs, Adolph L., Iowa City
Samani, Reuben, Akron
Sampson, Carl E., Creston
Samter, Bernhard, Mount Pleasant
Sand, Bernard F., Waterloo
Sanders, George E., Coral Gables, Fla. (L.M.)
Sanders, Matthew G., Fort Dodge
Sanders, William E., Tucson, Arizona (L.M.)
Sands, Sidney L., Des Moines
Sands, W. Wayne, Philadelphia, Penna.
Sartor, Guido J., Mason City
Satrang, Geraldine, Sioux City
Sattler, Dwight G., Kalona
Sauer, Harold E., Marshalltown
Saunders, Carol Lee Spellman, Des Moines
Saunders, John A., Des Moines
Sautter, Robert A., Mount Vernon
Saxton, Norval L., Oskaloosa
Scanlan, George C., Clinton
Scanlon, George H., Iowa City
Schacht, Norman A., Fort Dodge
Schaeferle, Lawrence G., Gladbrook
Schaeferle, Martin J., Eagle Grove
Schafer, Leander H., DeWitt
Schaffner, Rome L., Cedar Rapids
*Scharle, Theodore, Dubuque (A.M.)
Schedl, Harold P., Iowa City
Scheeres, Jacob W., Des Moines
Scheffel, Melvin L., Malvern
Scheibe, John R., Bloomfield
Schill, Austin E., Des Moines
Schissel, Donald J., Des Moines
Schlaser, Verne L., Des Moines
Schlichtemeier, Ellis O., Spencer
Schmiedel, Edward E., Charles City
Schmitt, Germain L., Cedar Rapids
Schmitt, Donald D., Des Moines
Schmitz, James P., Dubuque
Schnug, George E., Dows (L.M.)
Scholl, Charles R., Cedar Rapids
Schoonover, Richard, Bloomfield
Schrier, Harold L., Fort Madison
Schrock, Christian E., Iowa City
Schroeder, Adrian J., Marshalltown
Schroeder, Leslie V., Walcott
Schropp, Rutledge C., Des Moines
Schuchmann, John D., Cedar Rapids
Schueller, Charles J., Dubuque
Schultz, Ivan T., Humboldt
Schultz, Nelle E. T., Humboldt
Schumacher, Donald R., Clinton
Schupp, Joseph G., Jr., Des Moines
Schutter, John M., Algona
Schwartz, Charles, Cedar Rapids
Schwartz, John W., Sioux City
Sciortino, Aileen E. Mathiasen, Council Bluffs
Sciortino, Arthur L., Council Bluffs
Scott, Paul W., Ottumwa
Scott, Phillip A., Spirit Lake (A.M.)
Sear, John, Alden
Sebek, Roy O., Fort Dodge
Sedlacek, Leo B., Cedar Rapids (A.M.)
Sedlacek, Richard L., Cedar Rapids
Sedlacek, Robert A., Cedar Rapids
Seebohm, Paul M., Iowa City
Seely, Harmon D., Cherokee
Seibert, Cecil W., Waterloo
Seidler, William A., Jr., Jamaica
Selo, Rudolph A., Council Bluffs
Senft, Otto E., Monticello
Senska, Frank, Iowa City (A.M.)
Senty, Elmer G., Davenport
Severson, George J., Slater (L.M.)
Severson, Wayne L., Slater
Shafer, Arthur W., Davenport
Shagass, Charles, Iowa City
Shank, Raymond A., Cedar Rapids
Sharpe, Donald C., Dubuque
Shaw, David F., Britt
Shaw, Robert E., Waverly
Shea, Thomas E., Storm Lake
Sheehan, Daniel J., Cherokee
Sheeler, Ivan H., Marshalltown
Sheets, Raymond F., Iowa City
Shelton, Winfred N., Independence
Shepherd, Lloyd K., Des Moines
Sherman, Richard C., Los Angeles, Calif. (L.M.)
Shiffler, H. Kirby, Des Moines
Shinkle, William C., Des Moines
Shonka, Thomas E., Clarinda
Shope, Charles D., Greenfield
Shorey, Joseph R., Davenport
Shreffler, James L., Waterloo
Shulman, Herbert, Waterloo
Shultz, William T., Marshalltown
Shumrick, Donald A., Iowa City
Shurts, John J., Eldora
Sibley, Edward H., Sioux City
Sibley, John A., Ames
Silk, Marvin, Des Moines
Simpson, Roger A., Iowa City
Simmons, Ralph R., Des Moines (A.M.)
Singer, John R., Newton
Singer, Siegmund F., Ottumwa
Sinn, Irvin J., Williamsburg
Sinning, John E., Marshalltown
Sinning, John E., Jr., Iowa City
Sitz, Edward J., Waterloo
Skallerup, Glenn M., Red Oak
Skelley, Paul B., Jr., Dubuque
Skinner, Homer L., Carroll
Skopec, Francis M., Cedar Rapids
Skorey, George R., Sioux City
Skultety, F. Miles, Iowa City
Skultety, James A., Des Moines
Sloan, Fred R., Waterloo
Sloan, Fredric J., Cedar Rapids
Sloan, Morris G., Boone
Sloterdyk, Yme, Knoxville
Smazal, Stanley F., Davenport
*Smead, Leslie L., Newton (L.M.)
Smiley, Ralph E., Mason City
Smith, Alfred N. Des Moines
Smith, Andrew C., Waterloo
Smith, Andrew D., Primghar
Smith, Clyde J., Gilmore City
Smith, Elmer M., Des Moines
Smith, Eugene, Waterloo
Smith, Herman J., Des Moines
Smith, Ian M., Iowa City
Smith, J. Lawrence, Ames
Smith, James W., Iowa City
Smith, J. Ned, Iowa City
Smith, Jeanne Montgomery, Iowa City
Smith, John H., Davenport
Smith, Lawrence D., Des Moines
Smith, Lloyd D., Council Bluffs
Smith, Richard T., Davenport
Smith, Richard W., Clarion
Smith, Robert A., Albia
Smith, Robert J., Des Moines
Smith, Robert T., Granger
Smith, Rodger B., Mason City
Smith, S. Rodmond, Red Oak
Smith, Sidney A., Oskaloosa
Smrha, James A., Cedar Rapids
Smythe, Arnold M., Des Moines
Snyder, Raleigh R., Des Moines (L.M.)
Socarras, Alfredo D., Des Moines
Sohm, Herbert A., Des Moines
Soiseth, Robert P., Iowa City
Sokol, Charles R., State Center
Sokoll, Martin D., Iowa City
Solomons, Gerald, Iowa City
Sones, Clement A., Des Moines
Soper, Robert T., Iowa City
Sorensen, Elmer M., Red Oak
Sorenson, Aral C., Davenport
Sorenson, Kermit R., Clinton
Southwick, William W., Marshalltown
Sparks, Richard E., Lynnville
Spear, William, Oakdale
Spearing, Joseph H., Harlan
Speers, James F., Des Moines
Spellman, George G., Sioux City
Spencer, John H., Muscatine
Spencer, William A., Osage
Sperry, Frederick S., Clarinda
Spevak, Jack J., Des Moines
Spilman, Harold A., Ottumwa (L.M.)
Spivey, Bruce E., Iowa City
Spohnheimer, L. Nelson, Leon
Spragg, Thomas R., Waterloo
Springer, Floyd A., Des Moines
Sprowell, Robert, Ames

Stamler, Frederic W., Iowa City
Stansbury, John E., Santa Barbara, Calif. (A.M.)
Staples, Lawrence F., Des Moines
Stark, Cal H., Cedar Rapids
Stark, Frederick M., Sioux City
Starr, Charles F., Mason City (L.M.)
Starry, Allen C., Sioux City (A.M.)
Stauch, Omar A., Sioux City
Steenrod, Emerson J., Iowa Falls
Steffens, Lincoln F., Dubuque
Steffey, Fred L., Keokuk
Stegman, Jacob J., Marshalltown
Steimel, Kenneth P., Charles City
Steinbeck, William H., Keystone
Stephen, Paul, Cedar Rapids
Stephens, Ralph R., Des Moines
Stepp, James K., Manchester (L.M.)
Sternagel, Fred, West Des Moines
Sternhill, Isaac, Council Bluffs
Stevens, Clark W., Dubuque
Stevens, Wendell C., Iowa City
Steves, Richard J., Des Moines
Stewart, John H., Ottumwa
Stewart, John K., Clinton
Stickler, Robert B., Des Moines
Stiles, James F., Des Moines
Stimac, Emil M., Davenport
Stinard, Charles D., Glenwood
Stine, Earle J., Jr., Marcus
Stinson, Alice C., Estherville (L.M.)
Stitt, Paul L., Fort Dodge
Stoakes, Charles S., Lime Springs (L.M.)
Stockdale, John C., Burlington
Stoikovic, Joseph P., Burlington
Stone, Daniel B., Iowa City
Stone, William G., Independence
Storck, Robert D., Dubuque
Stoutland, H. Oliver, Ackley
Strand, Clarence M., Dubuque
Straub, Joseph J., Dubuque
Straumanis, Janis, Solon
Straumanis, John J., Iowa City
Strawn, John T., Vinton (L.M.)
Strong, Kirk H., Fairfield
Strottman, Merlin P., Iowa City
Stroy, Donald T., Council Bluffs
Stroy, Herbert E., Osceola
Stueland, Alvin J., Mason City
Stuelke, Richard G., West Branch
Stumme, Ernest H., Denver
Stumme, Luther P., Denver
Sullivan, Daniel J., Marshalltown
Sullivan, John E., Des Moines
Sulzbach, John F., Burlington
Summers, Thomas B., Des Moines
Sun, Kuei shu, Ames
Sunderbruch, John H., Davenport
Sunner, Gerald C., Fort Dodge
Sutton, Gerald H., Jr., Boone
Svendsen, Reinert N., Leopoldville, Congo
Swaney, Robert L., Cedar Rapids
Swanson, Eric M., Fort Dodge
Swanson, Gerald W., Lamoni
Swanson, Keith R., Hull
Swanson, Leslie W., Mason City
Swayze, V. Warren, Muscatine
Sweem, Donald L., Belmond
Sweeney, Lloyd J., Sanborn
Swenson, James D., Osage
Swift, Frederick J., Jr., Maquoketa
Synhorst, John B., Des Moines (A.M.)
Syverud, John M., Davenport

Tait, John H., Des Moines (A.M.)
Tamisiea, Francis X., Missouri Valley
Tammes, Arnold R., Iowa City
Taylor, Donald E., Stuart
Taylor, James H., Clinton
Taylor, Maude, Ottumwa (L.M.)
Taylor, Robert S., Davenport (L.M.)
Taylor, Wendel W., Sheffield
Tegler, Wayne J., Iowa City
Teigland, Joel D., Des Moines
Telfer, William L., Waterloo
Tempel, Paul F., Independence
Tenney, Phillip H., Independence
Teufel, John C., Davenport (L.M.)
Thaler, David, Cedar Rapids
Thatcher, Wilbur C., Fort Dodge
Thede, Norman D., Britt
Theilen, Ernest O., Iowa City
Thielen, Edward W., Waterloo
Thielen, John B., Fonda
Thoman, Mark E., Des Moines
Thoman, William S., Sioux City
Thomas, Clyde E., Croton-on-Hudson, N. Y. (L.M.)
Thomas, Colin G., Monticello (L.M.)
Thomas, James H., Sibley
Thompson, Elvin D., Jefferson
Thompson, Howard E., Dubuque (L.M.)
Thompson, James R., Waterloo (L.M.)
Thompson, Kenneth L., Oakland
Thompson, Virginia D., Des Moines
Thomsen, John G., Des Moines
Thornbury, John R., Iowa City
Thornton, F. Eberle, Des Moines
Thornton, John W., Lansing
Thornton, Thomas F., Waterloo (L.M.)
Thornton, Thomas F., Jr., Waterloo
Thorson, John A., Dubuque
Throckmorton, J. Fred, Des Moines
Throckmorton, Tom D., Des Moines
*Tice, Claude B., Mason City (L.M.)
Tice, George I., Mason City
Tice, W. Arnold, Waterloo
Tidrick, Robert T., Iowa City
Tiedeman, John P., Sioux City
*Tierney, Edmund J., Sioux City
Tierney, James M., Carroll
Tilton, John J., Bellevue
Todd, Donald W., Guthrie Center
Todd, Robert L., Burlington
Toland, Charles W., Mount Pleasant
Tolliver, Hillard A., Charles City
Top, Franklin H., Iowa City
Toubes, Abraham A., Des Moines
TouVelle, Alwyn R., Bettendorf
Towle, Robert A., Davenport
Tracy, John S., Sioux City
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Traynor, Eugene J., Independence
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Treynor, Jack V., Council Bluffs
Trier, Paul J., Des Moines
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Troxell, Millard A., Cedar Rapids
Trueblood, Clare A., Indianola
Trumpe, William D., Cedar Rapids
Trunnell, Thomas L., Waterloo
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Turner, James H., Fairfield
Turner, Rosalie C., Nashua
Turner, Roy M., Armstrong
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Underriner, Robert E., Holstein
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Updegraff, Robert R., Des Moines
Updegraff, Thomas R., Waterloo
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Utne, J. Richard, Mason City
Utter, James T., Cedar Rapids

Valestin, Robert F., Des Moines
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Van Bemmel, Piet F., Ames
Van Camp, Thomas H., Breda
Vander Meulen, Herman C., Pella
Vander Stoep, Harry L., LeMars
Van Epps, Eugene F., Iowa City
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Victorine, Edward M., Cedar Rapids (L.M.)
Villa, Jose E., Mount Pleasant
Viner, Thomas R., Leon
Vineyard, Thomas L., Ottumwa (L.M.)
Voigt, Ernest J., Burlington (A.M.)
Voigt, Franz O. W., Oskaloosa
Von Lackum, J. Kenneth, Cedar Rapids
Vorhes, Carl E., Sheldon
Vorisek, Elmer A., Des Moines
Vosika, Edward J., Washington
Votteler, Robert E., Iowa City

Waggoner, Charles V., Clinton
Wagner, Donald J., Sioux City
Wagner, Eugene C., Plainfield
Wahrer, Frederick L., Marshalltown (L.M.)
Wainwright, Max T., Sioux City
Waldorf, Richard D., Waterloo
Walker, Charles C., Des Moines (L.M.)
Walker, Glenn L., Burlington
Walker, John E., Cedar Rapids
Walker, John R., Waterloo
Walker, Thomas G., Riceville
Walker, Thomas S., Riceville (L.M.)
Wall, David, Ames
Wall, John M., Boone
Wallace, Leo F., Burlington
Walsh, William E., West Union
Walston, Edwin B., Jackson Heights, N. Y. (L.M.)
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Walton, Seth C., Hampton
Wanamaker, A. Roy, Hamburg
Wang, Martin, Sioux City
Ward, Donovan F., Dubuque
Ward, James S., Iowa City
Ward, Loraine W., Oelwein (L.M.)
Warden, Duane D., Council Bluffs
Ware, John, Mount Vernon
Ware, Stephen C., St. Petersburg, Florida
Ware, Thomas A., Sioux City
Warkentin, Donald L., Iowa City
Warner, Emory D., Iowa City
Warner, Willis A., Iowa City
Waste, Richard L., Manchester
Waterbury, Charles A., Jr., Waterloo
Watson, Charles F., Fairfield
Watt, Russell H., Marshalltown
*Watters, George H., Des Moines
Watts, A. Fred, Creston (A.M.)
Watts, Campbell F., Cedar Rapids
Watts, Clyde F., Marengo
Watzke, Robert C., Iowa City
Weaver, David F., Davenport
Weaver, Kenneth H., Union
Webb, Daniel R., Monticello
Webb, James B., Ottumwa
Weber, Frank N., Walnut
Weber, Leslie E., Jr., Wapello
Weber, William W., Pomeroy
Weideman, Don C., Vinton
Weikel, Vernon E., Davenport
Weinberg, Harry B., Davenport
Weingart, Julius S., Des Moines (L.M.)
Weland, Regis E., Cedar Rapids
Welcher, Wayne H., Newton
Wellman, Thomas G., Clinton
Wells, Richard D., Waterloo
Wells, Rodney C., Marshalltown
Wellso, Charles G., Cedar Rapids
Wentworth, Laydon S., Marble Rock
Wentzien, Albert J., Tama
Weresh, John D., Atlantic
Werner, Harold T., Fort Madison
Wessels, William R., Iowa City
West, Alroy G., Council Bluffs
West, George H., Jr., Mason City
West, Norman D., Avoca
Westerlund, Roger L., Ames
Westly, G. Travis, Mason City
Westly, J. Stephen, Mason City
Weston, B. Raymond, Mason City
Weston, Robert A., Des Moines (L.M.)
Wetrich, David W., Ottumwa
Wetrich, Max F., Grand Junction
Wettach, Robert S., Mount Pleasant
Weyer, Joseph J., Fort Dodge
Weyhrauch, Robert A., Cedar Falls
Wheeler, Edward R., Muscatine
Wheeler, Richard A., Des Moines
Whinery, Robert D., Iowa City
Whitaker, Ben T., Boone (L.M.)
White, Charles A., Iowa City
White, Charles E., Independence
White, George H., Des Moines
White, Thomas C., Chariton
Whitehouse, William N., Ottumwa
Whitley, Ralph L., Osage (L.M.)
Whitmer, Lysle H., Muscatine (A.M.)
Whitmire, James E., Sumner
Whitmore, William R., Davenport
Wichern, Homer E., Des Moines
Wicklund, Maurice M., Waterloo
Wicks, Ralph L., Boone
Widmer, James G., Wayland
Widmer, Reuben B., Winfield
Wiedemeier, Joseph L., Sioux City
Wiemers, Eugene L., Cherokee
Wigdahl, Lowell C., Emmetsburg

Wiggins, Henry, Jr., Iowa City
Wilcox, Dwain E., Atlantic
Wilcox, Edgar B., Oskaloosa (L.M.)
Wilcox, Keith E., Muscatine
Wilcox, Kenneth M., Central Tanganyika, East Africa
Wilcox, Robert A., Iowa City
Wildberger, William C., Perry
Wilson, Frederic W., Sioux City
Wiley, Alden F., Waukon
Wilke, Frank A., Perry
Wilker, Richard F., Creston
Willett, Wilton J., Manchester
Williams, M. Neil, Cedar Falls
Williamson, Billy J., Keokuk
Wilson, Charles R., Manson
Wilson, F. Dale, Davenport
Wilson, Fredric L., Sioux City
Wilson, Fredric W., Sioux City
Wilson, Robert G., Missouri Valley
Wilson, William R., Iowa City
Winninger, Louis T., Waterloo
Winter, David H., Marshalltown
Winter, F. Donald, Burlington
Wintermeyer, Laverne A., Des Moines
Wirtz, Dwight C., Des Moines
Wirtz, Emerson K., West Des Moines
Wise, Arthur C., Iowa City
Wise, James H., Cherokee
Withers, Bill R., Waukon
Wolf, Henry H., Elgin
Wolf, William J., West Union
Wolfe, Otis D., Marshalltown
Wolfe, Russell M., Marshalltown
Wolfe, Wilson C., Ottumwa
Wolpert, Paul L., Onawa
Wolters, Donald E., Estherville
Woodard, Donald E., Waterloo
Woodard, Ralph E., Fort Dodge
Woodburn, Chester C., Jr., Des Moines
Woodhouse, Keith W., Cedar Rapids
Woodward, Arthur W., Waterloo
Wooters, Richard C., Des Moines
Wormhoudt, Herbert L., Ottumwa
Worrell, James T., Keosauqua
Wray, Robert M., Cedar Rapids
Wright, David W., Decorah
Wright, Thomas D., Newton
Wright, Thomas G., Marion
Wubbena, Arthur C., Rock Rapids
Wuest, Curtis G., Amana
Wulfekuhler, Warren V., Mason City
Wurtzer, Ezra L., Clear Lake (L.M.)
Wyatt, George M., Iowa City
Wykoff, Sarah U., Des Moines (A.M.)

Yetter, William L., Iowa City
Yocum, Albert L., Chariton (L.M.)
York, Dallas L., Creston
York, George L., Clinton
Young, Donald C., Des Moines
Young, George G., Des Moines
Young, Howard O., Marion (L.M.)
Young, James J., Clinton
Young, Richard A., Clarion
Youngblade, Daniel M., Sioux City
Yugend, Sidney F., Indianola

Zaayer, D. William, Des Moines
Zabloudil, Warren C., Burlington
Zager, Lewis L., Waterloo
Zaharis, George M., Des Moines
Zehr, Earl E., Clarinda
Zelinskas, Leonard P., Dubuque
Zellweger, Hans, Iowa City
Zibilich, George J., Lone Tree
Ziebell, William C., Sioux City
Ziffren, Sidney E., Iowa City
Zimmerman, George R., Iowa City
Zoeckler, Samuel J., Des Moines
Zoutendam, Ronald L., Sheldon
Zukerman, Cecil M., Davenport

*Deceased
★Military Service
(L.M.) Life Member
(A.M.) Associate Member

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Ash, William E. ..... Council Bluffs

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Banton, Oscar H. ..... Charles City
Bartlett, George E. ..... New Sharon
Billingsley, John W. ..... Newton
Blaha, George A. ..... Whitten
Boice, Clyde A. ..... Washington
Bowers, Arthur S. ..... Orient
Bowie, Louis L. ..... Zearing
Bradley, Carl L. ..... Newhall
Bullock, William E. ..... Lake Park
Burbank, Dean S. ..... Pleasantville
Burcham, Thomas A. ..... Des Moines

Campbell, Thomas R. ..... Sioux Rapids
Carlile, Amos W. ..... Manning
Carlson, Frank G. ..... Mason City
Chase, William B., Sr. ..... Des Moines
Christensen, John R. ..... Palo Alto, California
Clapsaddle, John G. ..... Burt
Clasen, Henry W. ..... Littleton, Colorado
Closson, Charles L. ..... Walker
Cody, William E. ..... Sioux City
Cole, Elmer J. ..... Woodbine
Conmey, Roy M. ..... Sergeant Bluff
Connell, John ..... Des Moines
Cooper, Gladys A. ..... Lansing, Michigan
Cretzmeyer, Francis X. ..... Emmetsburg
Crew, Arthur E. ..... Marion
Crow, George B. ..... Burlington
Cusick, George W. ..... Davenport

Day, Philip M. ..... Oskaloosa
Decker, Jay C. ..... Sioux City
Ditto, Boyd L. ..... Burlington
Doane, Grace O. ..... Des Moines
Dorsey, Thomas J. ..... Fort Dodge
Downing, Leroy M. ..... Cedar Rapids

Egermayer, George W. ..... Elliott
Ennis, Harry H. ..... Manchester

Farlow, Charles T. ..... Farnhamville
Foley, Walter E., Sr. ..... Davenport

Gardner, John R. ..... Lisbon
Gearhart, George W. ..... Springville
Gernsey, Merritt ..... Long Beach, Calif.
Gillett, Francis A. ..... Oskaloosa
Goenne, William C., Sr. ..... Davenport
Goodenow, Sidney B. ..... Colo
Grubb, Merrill W. ..... Galva
Gutch, Roy C. ..... Chariton

Hamilton, Benjamin F. ..... Jefferson
Hansen, Robert R. ..... Marshalltown
Harken, Conreid R. ..... Osceola
Harris, Ray R. ..... Dubuque
Hickman, Charles S. ..... Centerville
Hill, Julia Ford ..... Santa Barbara
Hoffman, Paul M. ..... Tipton
Hollis, Edward L. ..... Marengo
Hopkins, David H. ..... Des Moines
Houser, Cass T. ..... Cedar Rapids
Housholder, Harold A. ..... Winthrop
Hudek, Joseph W. ..... Garnavillo

Ingraham, David R. ..... Sewal

Jaenicke, Kurt ..... Clinton
Jarvis, Harry D. ..... Chariton
Johann, Albert E. ..... Des Moines
Johnson, Amos E. ..... Florence, Nebraska

Jones, Harry J. ..... Cedar Rapids
Joynt, Albert J. ..... Waterloo
Joynt, Michael F. ..... Marcus

Kahler, Hugo V. ..... Reinbeck
Keech, Roy F. ..... Cedar Rapids
Keeney, George H. ..... Mallard
Kennedy, Elizabeth Smith ..... Oelwein
Kern, Lester C. ..... Waverly
Keyser, Ralph E. ..... Marshalltown
Kimball, John E. ..... West Liberty
Knox, James M. ..... Cedar Rapids
Kyle, William S. ..... Washington

Larson, Andrew G. ..... Dickens
Loes, Anthony M. ..... Dubuque

McCall, John H. ..... Allerton
McClean, Earl D. ..... Des Moines
McHugh, Charles P. ..... Sioux City
McMahon, Thomas ..... Clinton
McVay, Melvin J. ..... Lake City

Magee, Emery E. ..... Waterloo
Maplethorpe, Charles W., Sr. ..... Toledo
Matthey, Walter A. ..... Bettendorf
Maxwell, Charles T. ..... Sioux City
May, George A. ..... Forest Grove, Oregon
Meyers, Frank W. ..... Dubuque
Miller, Enos D. ..... Wellman
Minassian, Thaddeus ..... Des Moines
Mitchell, Claire H. ..... Cincinnati
Moore, Jesse C. ..... Vinton
Moorehead, Harold ..... Underwood
Murray, Frederick G. ..... Cedar Rapids

Neal, Emma J. ..... Cedar Rapids
Neuzil, William J. ..... Cedar Rapids
Noble, Nelle S. ..... Des Moines

O'Brien, Stephen A. ..... Mason City

Parker, Robert L. ..... Des Moines
Pfeiffer, Harry E. ..... Riviera Beach, Florida

Rankin, William ..... Keokuk
Reeder, James E., Sr. ..... San Diego, California
Rogers, Claude B. ..... Earlville
Rose, Alvin A. ..... Story City
Rowley, William B. ..... Sioux City
Royal, Malcolm A. ..... Des Moines
Russell, Ralph E. ..... Waterloo
Rust, Emery A. ..... Webb

Saar, Jesse L. ..... Donnellson
Sanders, George ..... Miami, Florida
Saunders, William E. ..... Tucson, Arizona
Schnug, George E. ..... Dows
Senska, Frank ..... Iowa City
Severson, George I. ..... Slater
Smead, Leslie L. ..... Newton
Snyder, Raleigh R. ..... Des Moines
Spilman, Harold A. ..... Ottumwa
Starr, Charles ..... Mason City
Stepp, James K. ..... Manchester
Stinson, Alice C. ..... Estherville
Stoakes, Charles S. ..... Lime Springs
Strawn, John T. ..... Vinton

Taylor, Maude ..... Ottumwa
Taylor, Robert S. ..... Davenport
Teufel, John C. ..... Davenport
Thomas, Clyde E. ..... Croton-on-Hudson, New York
Thomas, Colin G. ..... Monticello
Thompson, Howard E. ..... Dubuque
Thompson, James R. ..... Waterloo
Thornton, Thomas F. ..... Waterloo
Traister, John E. ..... Eddyville

Van Metre, Paul W. ..... Rockwell City
Victorine, Edward M. ..... Cedar Rapids
Vineyard, Thomas L. ..... Ottumwa

Walker, Charles C. ..... Des Moines
Walker, Thomas S. ..... Riceville
Walston, Edwin B. ..... Jackson Heights, New York
Ward, Loraine W. ..... Oelwein
Weingart, Julius S. ..... Des Moines
Weston, Robert A. ..... Des Moines
Whitaker, Ben T. ..... Boone
Whitley, Ralph L. ..... Osage
Wurtzer, Ezra L. ..... Clear Lake

Yocum, Albert L. ..... Chariton
Young, Howard O. ..... Cedar Rapids

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Mitchell, Mrs. C. H.

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*Smith, Mrs. Eugene
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Trunnell, Mrs. T. L.
Waldorf, Mrs. R. D.
Walker, Mrs. J. R.
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Greco, Mrs. L. R.
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Herman, Mrs. J. C.
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Manderscheid, Mrs. R. A.
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Sloan, Mrs. M. G.
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Donovan, Mrs. M. J.
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Petersen, Mrs. E. C.
Petersen, Mrs. M. T.
Weresh, Mrs. J. D.
Wilcox, Mrs. D. E.

Cumberland

Weaver, Mrs. Ralph

Griswold

England, Mrs. W. J.

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Mason City

Adams, Mrs. C. O.
Beard, Mrs. H. W.
Brady, Mrs. G. L.
Brenton, Mrs. H. L.
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Christopherson, Mrs. J. E.
Davidson, Mrs. T. E.
Dixon, Mrs. J. B.
Hale, Mrs. A. E.
Hanson, Mrs. W. N.
Healy, Mrs. J. D.
Joyce, Mrs. G. I.
Kapke, Mrs. F. W.
Kennedy, Mrs. E. D.
Kirkham, Mrs. L. J.
Potter, Mrs. P. H.
Powell, Mrs. R. M.
Smith, Mrs. R. B.
Swanson, Mrs. L. W.
Tice, Mrs. G. I.
Vegors, Mrs. S. H.
West, Mrs. G. H.

Rockwell

Adams, Mrs. V. J.

CLAY COUNTY

Royal

Colbert, Mrs. L. D.

Spencer

Edington, Mrs. F. D.
Fieselmann, Mrs. G. F.
Frink, Mrs. L. F.
Jones, Mrs. C. C.
*King, Mrs. D. H.
Munger, Mrs. E. E.
Schlichtemeier, Mrs. E. O.

CLINTON COUNTY

Clinton

Barrent, Mrs. M. E.
Carey, Mrs. E. T.
Chalian, Mrs. G. A.
Dwyer, Mrs. R. E.
Edwards, Mrs. J. F.
Ellison, Mrs. G. M.
Emmons, Mrs. M. B.
Foster, Mrs. W. H.
Griffith, Mrs. W. H.
Hill, Mrs. D. E.
Jensen, Mrs. A. L.
Jowett, Mrs. J. R.
Kershner, Mrs. F. O.
King, Mrs. R. C.
Meyer, Mrs. A. K.
Mirick, Mrs. D. F.
Monahan, Mrs. J. L.
Nelken, Mrs. Leonard
Nelson, Mrs. R. J.
O'Donnell, Mrs. J. E.
Petersen, Mrs. V. W.
Scanlan, Mrs. G. C.
Schumacher, Mrs. D. R.
Taylor, Mrs. J. H.
Waggoner, Mrs. C. V.
Weih, Mrs. E. P.
Wellman, Mrs. T. G.
York, Mrs. G. L.
Young, Mrs. J. J.

DeWitt

Ash, Mrs. W. H.
Marme, Mrs. G. W.

Grand Mound

Christiansen, Mrs. C. C.

Fulton, Illinois

Vruno, Mrs. M. J.

DALLAS-GUTHRIE COUNTIES

Adel

Fail, Mrs. C. S.

Casey

Krueger, Mrs. N. L.
Van Duzer, Mrs. W. R.

Dallas Center

Castles, Mrs. W. A.
Lister, Mrs. E. E.

Dexter

Chapler, Mrs. K. M.
Osborn, Mrs. C. R.

Granger

Smith, Mrs. R. T.

Guthrie Center

Neff, Mrs. Herbert
Thornburg, Mrs. W. V.
Todd, Mrs. D. W.

Jamaica

Seidler, Mrs. W. A.
Seidler, Mrs. W. A., Jr.

Panora

Nicoll, Mrs. C. A.
Peterson, Mrs. R. J.

Perry

Cochrane, Mrs. A. M.
Deranleau, Mrs. R. F.
Diddy, Mrs. K. W.
Ross, Mrs. A. J., Jr.
Wildberger, Mrs. W. C.

Van Meter

Felter, Mrs. A. G.

Woodward

Ping, Mrs. E. C.
Porter, Mrs. C. E.
Smith, Mrs. H. W.

DES MOINES COUNTY

Burlington

Aid, Mrs. F. H.
Allen, Mrs. R. B.
Bell, Mrs. R. S.
Coulson, Mrs. F. H.
Crawford, Mrs. R. H.
Crawford, Mrs. W. M.
Crow, Mrs. G. B.
Dawson, Mrs. O. L.
Ditto, Mrs. B. L.
Ditto, Mrs. W. B.
Eastburn, Mrs. H. B.
Eggleston, Mrs. A. A.
Friday, Mrs. W. C.
Gibbs, Mrs. G. M.
Guiang, Mrs. Sixto
Hosford, Mrs. H. F.
Jenkins, Mrs. G. D.
Lee, Mrs. W. R.
Lohmann, Mrs. C. J.
McElwain, Mrs. J. J., Jr.
McKitterick, Mrs. J. C.
Mazur, Mrs. T. T.
Murray, Mrs. J. H.
Nessa, Mrs. C. B.
Ober, Mrs. F. G.
Parsons, Mrs. Earl
Pearson, Mrs. G. J.
Petersen, Mrs. D. C.
Rowley, Mrs. R. D.
Russell, Mrs. E. P.
Saar, Mrs. J. L., Jr.
Stockdale, Mrs. J. C.
Stoikovic, Mrs. J. P.
Sulzbach, Mrs. J. F.
Walker, Mrs. G. L.
Wallace, Mrs. L. F.
Winters, Mrs. F. D.
Zabloudil, Mrs. W. C.

Mediapolis

Roules, Mrs. J. F.

New London

Mehler, Mrs. F. R.

DICKINSON COUNTY

Arnolds Park

Farago, Mrs. D. S.
Ward, Mrs. T. L.

Lake Park

Coble, Mrs. R. J.

Spirit Lake

Johnson, Mrs. E. L.
Rodawig, Mrs. D. F.
Rodawig, Mrs. D. F., Jr.
Scott, Mrs. P. A.

DUBUQUE COUNTY

Dubuque

Alt, Mrs. L. P.
Bartels, Mrs. E. R.
Barton, Mrs. R. L.
Baughman, Mrs. D. R.
Benda, Mrs. T. J.
Chapman, Mrs. J. S.
Coffman, Mrs. E. W.
Conklin, Mrs. E. V.
Connelly, Mrs. E. J.
Conner, Mrs. W. L.
Conzett, Mrs. D. C.
Entringer, Mrs. A. J.
Faber, Mrs. L. A.
Fuerste, Mrs. Frederick, Jr.
Gilloon, Mrs. J. R.
Graves, Mrs. J. P.
Greteman, Mrs. T. J.
Howell, Mrs. D. A.
Kapp, Mrs. D. F.
Kelly, Mrs. W. J.
Keohen, Mrs. G. F.
Lagen, Mrs. M. S.
Laube, Mrs. P. J.
Lee, Mrs. R. H.
McFarlane, Mrs. D. J.
McKay, Mrs. R. V.
McNamara, Mrs. R. J.
Melgaard, Mrs. R. T.
Merritt, Mrs. F. B.
Metzner, Mrs. F. N.
Moberly, Mrs. J. W.
Moeller, Mrs. J. A.
Nakashima, Mrs. V. K.
Nemmers, Mrs. J. G.
O'Brien, Mrs. S. A., Jr.
Olin, Mrs. E. E.
Orvis, Mrs. R. C.
Ott, Mrs. R. A.
Packard, Mrs. D. K.
Pfaff, Mrs. R. A.
Pfohl, Mrs. A. C.
Province, Mrs. William, Jr.
Rusk, Mrs. R. P.
Sharpe, Mrs. D. C.
Skelley, Mrs. P. B.
Steffens, Mrs. L. F.
Stevens, Mrs. C. W.
Storck, Mrs. R. D.
Strand, Mrs. C. M.
Straub, Mrs. J. J.
Thorson, Mrs. J. A.
Vernon, Mrs. R. G.
Ward, Mrs. D. F.
Zelinskas, Mrs. L. P.

Dyersville

Garry, Mrs. P. E.
Griffin, Mrs. C. C.
Hess, Mrs. J. F.
Luehrsmann, Mrs. B. C.

EMMET COUNTY

Armstrong

Lindholm, Mrs. C. V.
Turner, Mrs. R. M.

Estherville

Bose, Mrs. R. P.
Clark, Mrs. J. P.
Cox, Mrs. R. L.
Johnston, Mrs. G. B.
Lindholm, Mrs. H. A.
Powers, Mrs. J. L.
Vaubel, Mrs. E. K.
Wolters, Mrs. D. E.

GREENE COUNTY

Churdan

Lohr, Mrs. P. E.

Grand Junction

Wetrich, Mrs. M. F.

Jefferson

Brinker, Mrs. M. H.
Burke, Mrs. R. W.
Canady, Mrs. G. F.
Hamilton, Mrs. B. C.
Jongewaard, Mrs. A. J.
Knosp, Mrs. A. A.
Marshall, Mrs. L. L.
Nelson, Mrs. L. C.
Thompson, Mrs. E. D.

Rippey

Chase, Mrs. W. E.

GRUNDY COUNTY

Conrad

Patterson, Mrs. R. K.
Button, Mrs. G. D.

Grundy Center

Mol, Mrs. H. L.
Reedholm, Mrs. E. A.
Rose, Mrs. J. E.

Reinbeck

Kahler, Mrs. H. V.

Wellsburg

Meyer, Mrs. R. J.

HAMILTON COUNTY

Stanhope

Anderson, Mrs. D. C.

Webster City

Brown, Mrs. E. F.
Buxton, Mrs. O. C., Jr.
Crumpton, Mrs. R. C.
Howar, Mrs. B. F.
Ledogar, Mrs. J. A.
Lowary, Mrs. E. K.
Paschal, Mrs. G. A.
Patterson, Mrs. R. A.
Ptacek, Mrs. J. L.
Rambo, Mrs. E. F.

JEFFERSON COUNTY

Fairfield

Castell, Mrs. J. W.
Cook, Mrs. K. G.
Dunlevy, Mrs. J. H.
Egli, Mrs. G. E.
Gittler, Mrs. Ludwig
McClurg, Mrs. F. H.
Morgan, Mrs. J. N.
Ryan, Mrs. R. A.
Strong, Mrs. K. H.
Turner, Mrs. J. H.
Watson, Mrs. C. F.

JOHNSON COUNTY

Iowa City

Anderson, Mrs. G. S.
Bennett, Mrs. A. W.
Boiler, Mrs. W. F.
Bozek, Mrs. T. T.
Carney, Mrs. R. G.
Chong, Mrs. A. Y.
Cross, Mrs. K. R.
Ehrenhaft, Mrs. J. L.
Garvy, Mrs. A. C.
Hyndman, Mrs. O. R.
Jacques, Mrs. L. H.
Jenkinson, Mrs. H. R.
Joynt, Mrs. R. J.
Krehl, Mrs. W. A.
Kretzschmar, Mrs. R. M.
Layton, Mrs. J. M.
McKee, Mrs. A. P.
Miller, Mrs. C. I.
Mosher, Mrs. M. L.
Scanlon, Mrs. G. H.
Schrock, Mrs. C. E.
Skultety, Mrs. F. M.
Tegler, Mrs. W. J.
Tidrick, Mrs. R. T.
Van Epps, Mrs. E. F.
Wyatt, Mrs. G. M.

Oakdale

Cahn, Mrs. Philip
Kent, Mrs. R. W.
Spear, Mrs. W. M.
Webb, Mrs. D. R.

LEE COUNTY (NORTH)

Fort Madison

Adams, Mrs. L. E.
Archibald, Mrs. M. H.
De Lashmutt, Mrs. E. J.
Dierker, Mrs. L. J.
Doering, Mrs. V. T.
Feightner, Mrs. R. L.
Harper, Mrs. G. E.
Harper, Mrs. H. D.
Helling, Mrs. H. B.
Kasten, Mrs. W. C.
McGee, Mrs. J. E.
McGinnis, Mrs. G. C.
McIllece, Mrs. R. C.
McMillan, Mrs. G. J.
Murphy, Mrs. R. E.
Noble, Mrs. F. W.
Polit, Mrs. Jaime
Reimers, Mrs. Robert
Richmond, Mrs. A. C.
Richmond, Mrs. F. R., Jr.
Werner, Mrs. H. T.

West Point

Poepsel, Mrs. F. L.

LYON COUNTY

George

Gessford, Mrs. H. H.
Lavender, Mrs. J. G.

Rock Rapids

Cook, Mrs. S. H.
Griesy, Mrs. C. V.
Wubbena, Mrs. A. C.

MAHASKA COUNTY

Fremont

Duncan, Mrs. Ellis

New Sharon

Phelps, Mrs. R. E.

Oskaloosa

Atkinson, Mrs. G. S.
Bennett, Mrs. G. W.
Bos, Mrs. H. C.
Campbell, Mrs. D. K.
Campbell, Mrs. W. V.
Catterson, Mrs. L. F.
Clark, Mrs. G. H.
Collison, Mrs. R. M.
Gillett, Mrs. F. A.
Grahek, Mrs. L. J.
Lemon, Mrs. K. M.
Polich, Mrs. J. J.
Saxton, Mrs. N. L.
Smith, Mrs. Sidney
Voigt, Mrs. F. O.
Wilcox, Mrs. E. B.

MARION COUNTY

Knoxville

Arnott, Mrs. G. M.
Burroughs, Mrs. C. R.
Clark, Mrs. T. D.
McClung, Mrs. R. R.
McKeever, Mrs. E. J.
Mater, Mrs. D. A.
Ralston, Mrs. F. P.
Sloterdyk, Mrs. Yme

Pella

Van Zante, Mrs. Peter

MARSHALL COUNTY

Marshalltown

Carpenter, Mrs. R. C.
Cloud, Mrs. A. B.
Garland, Mrs. J. C.
German, Mrs. R. G.
Goodman, Mrs. L. O.
Graether, Mrs. J. M.
Hansen, Mrs. R. R.
Heise, Mrs. H. R.
Hockmuth, Mrs. R. E.
Jacobs, Mrs. E. L.
Jeffries, Mrs. M. E.
Keyser, Mrs. E. L.
Kosieradzki, Mrs. Henry
Marble, Mrs. E. J.
Marble, Mrs. W. P.
Reading, Mrs. D. S.
Sauer, Mrs. H. E.
Schroeder, Mrs. A. J.
Sheeler, Mrs. I. H.
Shultz, Mrs. W. T.
Southwick, Mrs. W. W.
Watt, Mrs. R. H.
Wells, Mrs. R. C.
Wessels, Mrs. W. R.
Winter, Mrs. D. H.
Wolfe, Mrs. O. D.
Wolfe, Mrs. R. M.

State Center

Robinson, Mrs. R. G.
Sokol, Mrs. C. O.

MONONA COUNTY

Mapleton

Ganzhorn, Mrs. H. L.
Ganzhorn, Mrs. J. L.
Ingham, Mrs. P. G.

Moorhead

Stauch, Mrs. M. O.

Onawa

Garred, Mrs. W. P.
Gaukel, Mrs. L. A.
Gingles, Mrs. E. E.
McClellan, Mrs. J. W.
Wolpert, Mrs. P. L.

Ute

Liska, Mrs. E. J.

Whiting

Garred, Mrs. J. L.

MONTGOMERY COUNTY

Red Oak

Alden, Mrs. Oscar
Bastron, Mrs. H. C.
Fickel, Mrs. J. D.
Hansen, Mrs. F. A.
Skallerup, Mrs. G. M.
Smith, Mrs. S. R.
Sorensen, Mrs. E. M.

Villisca

Croxdale, Mrs. E. L.
Poore, Mrs. S. D.

OSCEOLA COUNTY

Harris

Paulsen, Mrs. H. B.

Sibley

Carroll, Mrs. T. J.
O'Leary, Mrs. F. B.
Rizzo, Mrs. Frank
Thomas, Mrs. J. H.

PALO ALTO COUNTY

Algona

Plott, Mrs. C. L.

Emmetsburg

Brereton, Mrs. H. L.
Brink, Mrs. J. R.
Coffey, Mrs. J. L.
Conway, Mrs. F. S.
Keeney, Mrs. G. H.
Moore, Mrs. C. C.
Powers, Mrs. H. R.
Wigdahl, Mrs. L. O.

POLK COUNTY

Ankeny

Gray, Mrs. L. R.
Hach, Mrs. F. T.
Nielsen, Mrs. A. T.

Des Monies

Abbott, Mrs. W. D.
Alberts, Mrs. M. E.
Allender, Mrs. R. B.
Amick, Mrs. P. P.
Anderson, Mrs. H. N.
Anderson, Mrs. R. W.
Augspurger, Mrs. B. B.
Baker, Mrs. W. E.
Bakody, Mrs. J. T.
Bates, Mrs. M. T.
Bell, Mrs. J. R.
Birge, Mrs. R. F.
Blair, Mrs. D. W.
Blount, Mrs. H. C., Jr.
Bone, Mrs. H. C.
Bruner, Mrs. J. M.
Burcham, Mrs. T. A.
Burgeson, Mrs. F. M.
Burke, Mrs. E. T.
Burns, Mrs. Harry
Burr, Mrs. C. L.
Byers, Mrs. J. R.
Cardenas, Mrs. V. J.
Carter, Mrs. R. E.
Cash, Mrs. P. T.
Caudill, Mrs. G. G.
Chambers, Mrs. J. W.
Chase, Mrs. W. B., Jr.
Chase, Mrs. W. B., Sr.
Clemens, Mrs. A. L.

Corn, Mrs. H. H.
Coughlan, Mrs. D. W.
Cromwell, Mrs. J. O.
Crowley, Mrs. D. F., Jr.
Dahl, Mrs. H. W.
Decker, Mrs. H. G.
Dickens, Mrs. J. H.
Diment, Mrs. Merle
Dolan, Mrs. J. E.
Dorner, Mrs. R. A.
Downing, Mrs. A. H.
Downing, Mrs. J. A.
Drew, Mrs. E. J.
Dubansky, Mrs. M. H.
Dyson, Mrs. R. E.
Eklund, Mrs. H. E.
Elliott, Mrs. O. A.
Ellis, Mrs. H. G.
Ely, Mrs. L. O.
Fatland, Mrs. J. L.
Foss, Mrs. R. H.
Fraser, Mrs. J. B.
From, Mrs. Paul
Gangeness, Mrs. L. G.
Geoghegan, Mrs. B. P.
Ghrist, Mrs. T. D.
Gibson, Mrs. D. N.
Glomset, Mrs. D. A.
Goldberg, Mrs. Louis
Gordon, Mrs. A. M.
Gould, Mrs. J. P.
Green, Mrs. J. W., Jr.
Greenhill, Mrs. Solomon
Gurau, Mrs. H. H.
Gustafson, Mrs. J. E.
Gutenkauf, Mrs. C. H.
Haines, Mrs. D. J.
Hammer, Mrs. R. W.
Hansell, Mrs. W. W.
Harnagel, Mrs. E. J.
Hayek, Mrs. J. M.
Hayne, Mrs. R. A.
Heeren, Mrs. R. H.
Hepplewhite, Mrs. J. W.
Hertko, Mrs. E. J.
Hess, Mrs. John, Jr.
Hill, Mrs. L. F.
Hines, Mrs. R. E.
Hirsch, Mrs. M. R.
Hoffmann, Mrs. R. W.
Holzworth, Mrs. P. R.
Hornaday, Mrs. W. R., Jr.
Hornaday, Mrs. W. R., Sr.
Hughes, Mrs. P. K.
Hull, Mrs. C. N.
Irving, Mrs. N. W., Jr.
James, Mrs. D. W.
Jenkins, Mrs. H. F.
Jenks, Mrs. A. L., Jr.
Johnson, Mrs. C. O.
Johnson, Mrs. R. M.
Johnston, Mrs. C. H.
Jones, Mrs. C. C.
Kast, Mrs. D. H.
Katzmann, Mrs. F. S.
Kelley, Mrs. J. H.
Kelley, Mrs. N. R.
Kelly, Mrs. D. H., Jr.
Kelly, Mrs. D. H., Sr.
Kelsey, Mrs. J. E.
Kern, Mrs. G. A.
Kilgore, Mrs. B. F.
Klocksiem, Mrs. H. L.
Knox, Mrs. R. M.
Koenig, Mrs. F. J.
Koons, Mrs. C. H.
La Mar, Mrs. J. W.
Lambrecht, Mrs. P. B.
Larson, Mrs. R. G.
Latchem, Mrs. C. W.
Lawler, Mrs. M. P., Jr.
Losh, Mrs. C. W., Jr.
Lovejoy, Mrs. E. P.
Lowry, Mrs. E. C.
Lulu, Mrs. D. J.
Maher, Mrs. L. L.
Maly, Mrs. R. F.
Mark, Mrs. M. S.
Marquis, Mrs. G. S.
Matheson, Mrs. J. H.
Matthews, Mrs. Alexander
McBride, Mrs. D. F.
McClean, Mrs. E. D.
McCoy, Mrs. H. J.
McGarvey, Mrs. C. J.
McNamee, Mrs. J. H.
Meredith, Mrs. L. K.
Merillat, Mrs. H. C.
Merkel, Mrs. A. E.
Merkel, Mrs. B. M.
Merritt, Mrs. J. O.
Meservey, Mrs. M. A.
Minassian, Mrs. T. A.
Mintzer, Mrs. A. J.
Modaff, Mrs. W. L.
Mooney, Mrs. J. C.
Moore, Mrs. Fred
Moore, Mrs. R. M.
Morrison, Mrs. J. R.
Morrissey, Mrs. W. J.
Mountain, Mrs. G. E.
Myerly, Mrs. W. H.
Newland, Mrs. D. O.
Nielsen, Mrs. G. E.
Nitzke, Mrs. E. A.
Nordin, Mrs. C. A.
Noun, Mrs. L. J.
Noun, Mrs. M. H.
Olsen, Mrs. M. I.
Olson, Mrs. S. O.
Ortiz, Mrs. R. I.
Parson, Mrs. V. G.
Payne, Mrs. H. C.
Pearlman, Mrs. L. R.
Peisen, Mrs. C. J.
Peterson, Mrs. L. G.
Phillips, Mrs. A. B.
Posner, Mrs. E. R., Jr.
Priestly, Mrs. J. B.
Purnell, Mrs. G. B.
Redfield, Mrs. E. L.
Reed, Mrs. R. J.
Riegelman, Mrs. R. H.
Rindskopf, Mrs. Wallace
Rinella, Mrs. J. L.
Rotkow, Mrs. M. J.
Ryan, Mrs. J. W., Jr.
Schissel, Mrs. D. J.
Schlaser, Mrs. V. L.
Schmitz, Mrs. H. C.
Schropp, Mrs. R. C.
Schupp, Mrs. J. G., Jr.
Shepherd, Mrs. L. K.
Shiffler, Mrs. H. K.
Shinkle, Mrs. W. C.
Silk, Mrs. Marvin
Skultety, Mrs. J. A.
Smith, Mrs. A. N.
Smith, Mrs. E. M.
Smith, Mrs. H. J.
Smith, Mrs. L. D.
Smythe, Mrs. A. M.
Sohm, Mrs. H. A.
Sones, Mrs. C. A.
Speers, Mrs. J. F.
Spevak, Mrs. Jack
Springer, Mrs. F. A.
Stephens, Mrs. R. R.
Steves, Mrs. R. J.
Stickler, Mrs. R. B.
Stiles, Mrs. J. F.
Summers, Mrs. T. B.
Teigland, Mrs. J. D.
Thomsen, Mrs. J. G.
Thornton, Mrs. F. E.
Throckmorton, Mrs. J. F.
Throckmorton, Mrs. T. B.
Throckmorton, Mrs. T. D.
Toubes, Mrs. A. A.
Turner, Mrs. H. V.
Updegraff, Mrs. R. R.
Valestin, Mrs. R. F.
Vorisek, Mrs. E. A.
Walter, Mrs. D. J.
Watters, Mrs. G. H.
Weingart, Mrs. J. S.
Wheeler, Mrs. R. A.
White, Mrs. G. H.
Wichern, Mrs. H. E.
Wintermeyer, Mrs. L. A.
Wirtz, Mrs. D. C.
Woodburn, Mrs. C. C., Jr.
Young, Mrs. D. C.
Young, Mrs. G. G.
Zaharis, Mrs. G. M.
Zoeckler, Mrs. S. J.

Huxley

Nelson, Mrs. A. L.

West Des Moines

Barnes, Mrs. M. E., Jr.
Barnett, Mrs. J. A.
Brown, Mrs. A. W.
Coleman, Mrs. F. C.
Overton, Mrs. R. W.
Socarras, Mrs. A. D.
Sternagel, Mrs. Fred
Van Natta, Mrs. C. W.

Indianola

Cornish, Mrs. L. R.
Porter, Mrs. L. W.
Trueblood, Mrs. C. A.
Yugend, Mrs. S. F.

Norwalk

Cunningham, Mrs. M. B.

POTTAWATTAMIE COUNTY

Carson

Angel, Mrs. J. V. G.

Council Bluffs

Bean, Mrs. E. O
Beaumont, Mrs. F. H.
Bierman, Mrs. M. H.
Cogley, Mrs. J. P.
Collignon, Mrs. U. J.
Conlon, Mrs. J. B.
Edwards, Mrs. C. V.
Edwards, Mrs. C. V., Jr.
Floersch, Mrs. E. B.
Giles, Mrs. W. C.
Gonlubol, Mrs. F. S.
Griffith, Mrs. W. O.
Guggenheim, Mrs. Paul
Hanssmann, Mrs. I. J.
Hathaway, Mrs. W. R.
Hennessy, Mrs. J. D.
Hirst, Mrs. D. V.
Hombach, Mrs. W. P.
Hopp, Mrs. R. L.
Howard, Mrs. L. G.
Kenney, Mrs. B. E.
Kinney, Mrs. M. W.
Klok, Mrs. G. J.
Knott, Mrs. J. L.
Krettek, Mrs. J. E.
Kruml, Mrs. J. G.
Landry, Mrs. G. R.
Lowry, Mrs. C. F.
Mahoney, Mrs. J. D.
Margules, Mrs. M. P.
Marsh, Mrs. F. E., Jr.
Martin, Mrs. L. R.
Mathiasen, Mrs. E. B.
Mathiasen, Mrs. H. W.
Mathiasen, Mrs. J. W.
Moe, Mrs. R. H.
Moriarty, Mrs. D. L.
Ozaydin, Mrs. I. M.
Pedersen, Mrs. A. M.
Pedersen, Mrs. P. D.
Pester, Mrs. G. H.
Rassekh, Mrs. Hormoz
Selo, Mrs. R. A.
Smith, Mrs. L. D.
Sternhill, Mrs. Isaac
Stroy, Mrs. D. T.
Trafton, Mrs. H. F.
Warden, Mrs. D. D.
Weir, Mrs. E. C.
West, Mrs. A. G.

Minden

Olsen, Mrs. M. E.

Oakland

Hausheer, Mrs. M. R.

SCOTT COUNTY

Bettendorf

Altman, Mrs. S. J.
Agnew, Mrs. J. W.
Bovenmyer, Mrs. D. A.
Byrum, Mrs. R. J.
Erikson, Mrs. R. E.
Gibson, Mrs. P. E.
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Sibley, Mrs. J. A., Ames (Story)
Smith, Mrs. J. L., Ames (Story)
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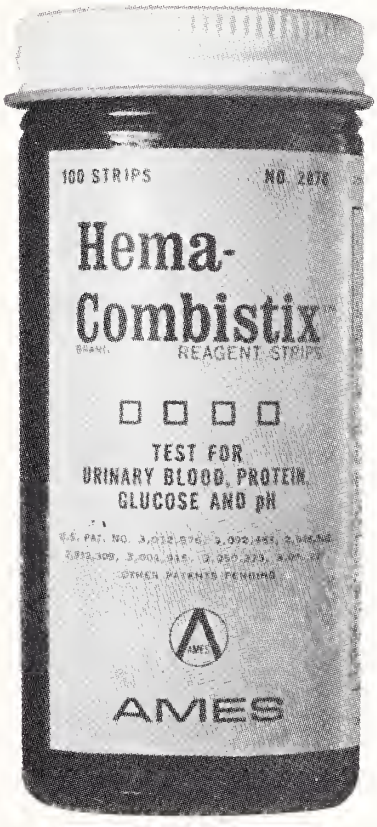
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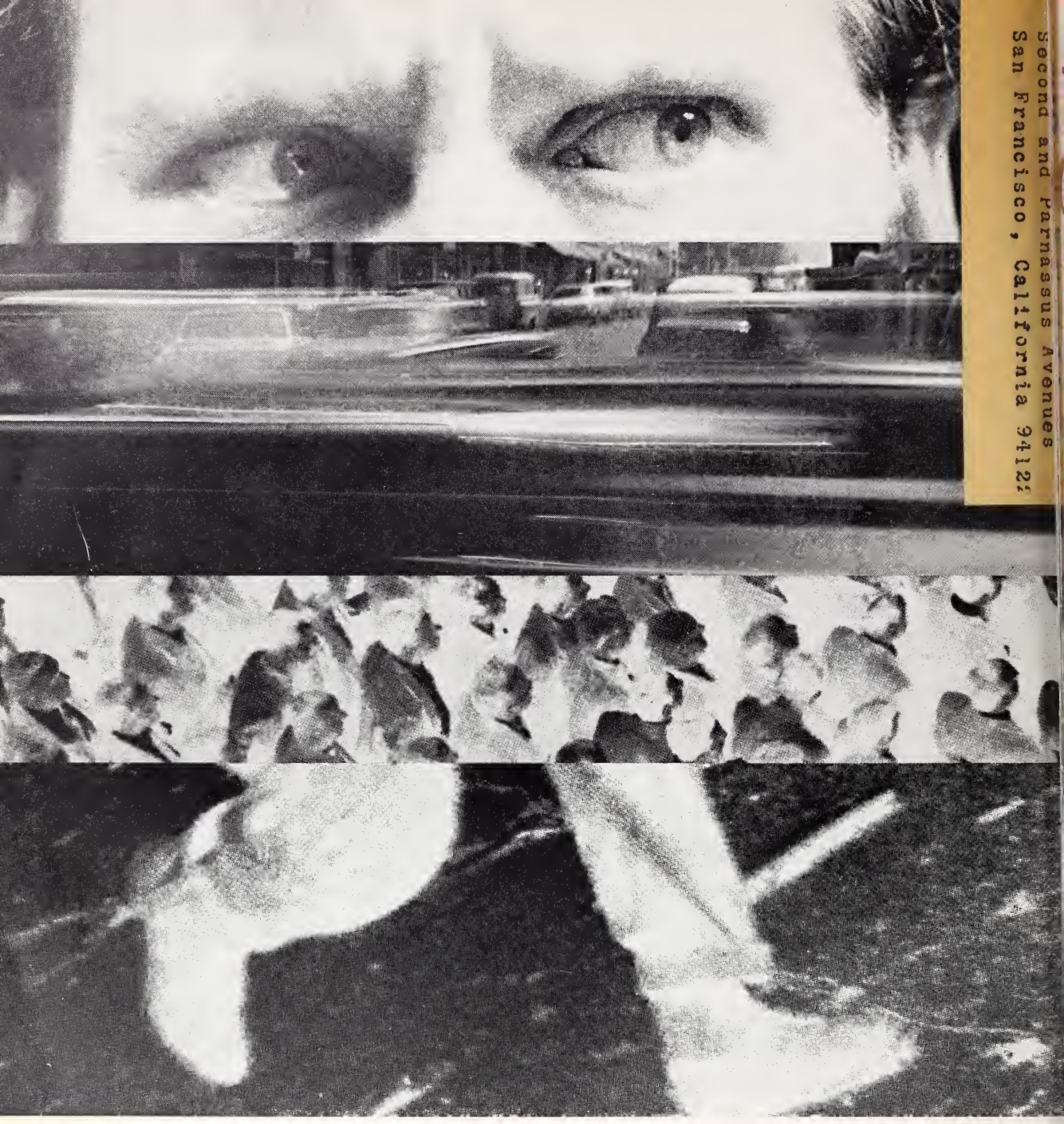
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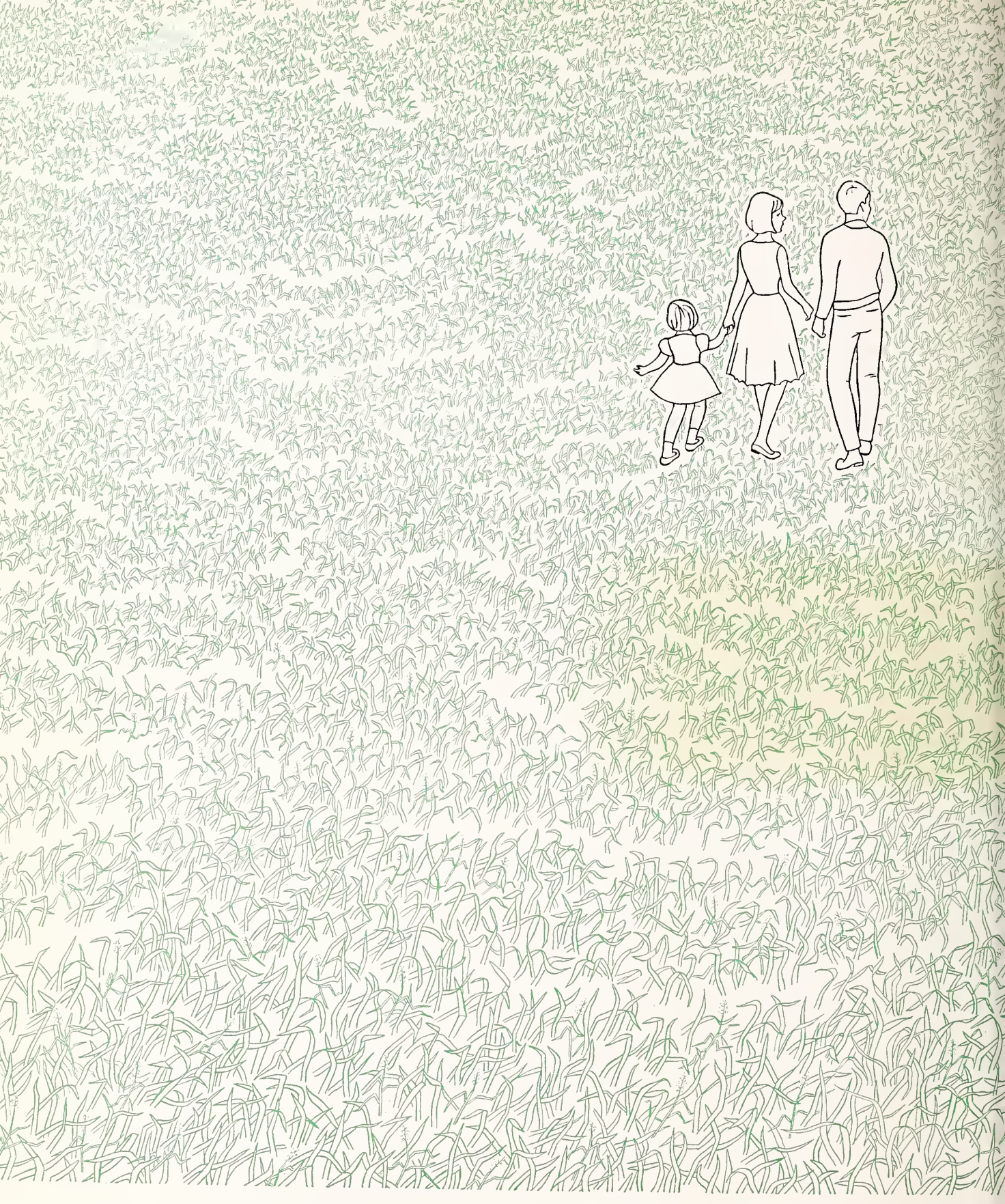
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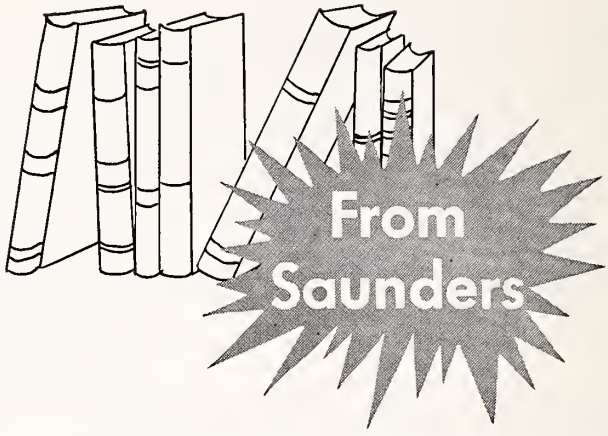
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Training Medical Students for General Practice

ROBERT E. CARTER, M.D.
Iowa City

Several suppositions are inherent in the title for this article, and it would be wise to examine them at the outset, for they lie at the very heart of the general-practice problem. Indeed the expression "general-practice problem" is a poor choice of words, for it implies that something is wrong with general practice itself. Nothing could be further from the truth, though we all recognize that certain difficulties have and will beset the general practice of medicine and that they may increase in future years, rather than diminish.

When we speak of training medical students for general practice, we assume that we can define general practice and that we know enough to train young men to start such practices. We take for granted that students will desire such training. Finally, we pretend to know at what time in the students' educational experience they should be given what knowledge is at hand. Each of these assumptions must be analyzed in some detail.

In the United States, today, a debate is being waged over the future of general practice. This debate was occasioned by the expansion of medical specialty training after the Second World War. The magnitude of this training effort made it inevitable that the general practitioner's future would be challenged, and the challenge came when the number of AMA-approved resident positions finally exceeded the total number of positions for medical students in all undergraduate years in all American medical schools. The dawn of the specialty Utopia was at hand—the day when each of us could be trained to practice within his own niche of special, complete knowledge. This perspective of practice seems to have been a natural outgrowth of the rapid expansion of medical knowledge that had occurred in the 1930's and the 1940's, an expansion which has been accelerating ever since. "You can't learn it all," many educators asserted, quite correctly, but some people took their admonition to mean, "Don't bother to learn so much." Specialists reigned supreme, dividing and subdividing into ever smaller categories.

We are now debating the wisdom of that development, and nowhere are physicians' feelings about it more intense than in the middle portion of the United States. The concept of total specialty practice has proved unsatisfactory to many physicians; the public image of medicine is poor; and a shortage of many types of doctors exists, despite an unchanging physician-population ratio. The specter of an impossibly large body of essential knowledge as a prerequisite to the practice of good general medicine has not actually materialized. I do not imply that these factors are causally related in their entirety, but I suspect that there is more interdependence than meets the eye.

THE GP'S IMAGE NEEDS NO EMBELLISHMENT

From discussion and thoughtful debate, the concept of an American medical generalist is gradually emerging—a physician who can stand side by side with the medical specialist. This physician is not only a "first contact" doctor, but also a physician who provides continuing care for a large number of families and individuals with frequently-occurring problems and diseases. His role need not be hampered by over-definition, any more than his title needs be replaced by a catchy, smooth-sounding designation. He is simply a good physician with a broad, active clinical interest—one who knows a great deal about many aspects of medicine. To maintain a state of medical preparedness, he must be curious about many specialty areas and should perform continuously in those areas to the limit of his ability. Unless he maintains this breadth of interest, he cannot function as a competent diagnostician or as an efficient therapist for frequently-encountered problems. In answer to the statement, "To be an efficient generalist requires an impossible amount of knowledge," I suggest that many areas of clinical medicine are actually becoming easier to master as scientific fact replaces empiricism, and as logical explanation supplants arbitrary, poorly-remembered clinical "rules."

This concept of an American medical generalist

Until recently, Dr. Carter was director of the two-year general practice residency program at Broadlawns-Polk County Hospital, in Des Moines. He is an associate professor of pediatrics at the S.U.I. College of Medicine, and is assistant dean in charge of postgraduate medical education there. He made this presentation at the 1964 IMS annual meeting.

does not preclude equally active specialists and a busy referral system. In fact it can only strengthen the specialist's position, for someone must see and treat all patients, and the specialist may not have time to be an authority in his chosen field if he must screen unrelated problems, thus running a partial general practice on the side. A good generalist knows when to refer a patient, and may know his limitations more accurately than can a specialist who occasionally dabbles in areas other than his own, unwittingly committing untold sins of omission. Of all the dangers of increased specialization, I fear most for the average patient's safety. Who will actually treat him? We all agree that an internist can assume broad responsibilities, but there are not enough internists (or pediatricians for the children). Who else will play this role? Will it be an orthopedic surgeon, a neurologist or a gynecologist? Or will it be a hastily summoned panel of experts? These possibilities seem unlikely. Someone will bite off more than he can chew!

The American medical generalist whom we should like to train, then, is a competent physician of broad interests, participating in many facets of the medical care of the patient. We need not conjure up special names for him in an effort to make him popular. There is little need to justify his role with new sociologic concepts of family life and community integration, although he must be aware of these developments and apply them to the benefit of his patients. Good medical practice is enough reason for having good generalists, and for training them well.

If this picture of the generalist is accepted, will medical students consider general practice? I feel that the answer is "Yes." The image of the modern generalist should be as attractive to good students as is that of the specialist. It may be even more challenging. Most students choose medicine because they want to be doctors. They specialize later, and they will specialize in general medicine if good training is available. We cannot expect to return to the day when 90 per cent of medical graduates undertook general practice, since social, geographic and population-distribution factors preclude anything of that sort, not to mention the legitimate role of the specialist and the expanding horizon of *truly* advanced knowledge. But we can provide an adequate supply of general practitioners in those areas where they play a most effective role.

DEPARTMENTS OF GENERAL PRACTICE ARE NOT THE ANSWER

How can we maintain the image of the generalist for our undergraduate medical students? Nearly every medical college is struggling with this problem in a university atmosphere where each department is headed by a formidable specialist with awe-inspiring clinical judgment. The problem must be answered, however, before we can consider the structure of a general-practice training program. I am not certain my solution is correct, but I hope it is in the direction of a logical and proper answer. It amounts simply to this: The complexity of modern medicine is not overwhelming, but it is sufficiently great to pose real problems in teaching. There is no longer any slack time in a medical curriculum, and there is little chance for repetition of subject matter. Students must get basic knowledge the first time it is offered to them, and they must get it straight. This requirement necessitates efficient teaching, and efficient teaching means the maintenance of specialty departments. Imparting the fundamentals of psychiatry to medical students, for example, could be done by a number of teachers, including a panel of competent generalists, but a psychiatrist can do it more efficiently and at a lower cost per student. And so it goes. Pediatrics must be taught to undergraduates by a pediatrician, obstetrics by an obstetrician, and so forth. These specialists teach the core necessary for good general medicine, because general practice is part and parcel of each and every specialty. But must the student follow in the footsteps of only one of his masters? Of course not, and the teacher who feels this is so should carefully reexamine his position.

What will draw this basic core curriculum together into a cohesive unit and encourage the student to choose general practice? What can prevent the student from being torn asunder by the strong forces of specialty interests? I contend that the faculty itself must maintain the proper balance and integration of the curriculum. No Department of General Practice can do this, any more than a single specialty department can. Integration and balance must be based on the wisdom, good intentions and good offices of the majority of the faculty itself. In a sense, a Department of General Practice already exists in the curriculum committee of each and every medical school, in the committee of department heads and in the administration of the school. Thus, the creation of a separate Department of General Practice would not solve the problem at the undergraduate level in most medical schools today.

This concept may be challenged by many advocates of general practice. Much wiser heads than mine remember times when lip service was given to general practice while the really high cards in the medical deck were dealt out from under the table. But I suggest the proposition that until each specialty department can accept the dual role of advancing knowledge in its chosen area and of strengthening its relation to the general "practice of medicine," we shall have no enduring peace on the western front. Old hostilities and sensitivities must end. "Town and gown" conflicts should be resolved, since their solution can only benefit both sides in this pseudo-ideological struggle. Petty arguments between medical schools and medical practitioners are unworthy of the intelligent, well educated scientists that doctors really are. All con-

sultants, be they in a medical school or not, must treat the referring physician with the respect that he deserves. The referring physician must also be willing to accept sincere, honest and discrete appraisal of his management of certain patients.

Every specalist should decide whether he is really for or against general practice. If he is for it, and I think the majority are, he should support it. This, above anything else, will keep the proper general-practice image before our undergraduate students.

PRECEPTORSHIPS AND GENERAL-PRACTICE RESIDENCIES

A second way to attract students to general practice during their undergraduate years is through the preceptorship program. The preceptorship can approach a teaching ideal: one student, one teacher, and many typical patients. It means work for the teacher, but we should think of every preceptor as an essential member of the medical school faculty. Through this means, the faculty of the college and many of the state's practitioners can join forces toward a common goal, teaching good medicine to deserving students.

So much for emphasis on general practice in the undergraduate years. We should make its image attractive, and keep it before the student while we are giving him the necessary core of knowledge in the most efficient way we know.

The next question is "When do we start the student in actual general practice?" I feel that the answer is in the years immediately following graduation from medical school. As Dr. Robert C. Hardin, dean of the S.U.I. College of Medicine, outlined a year ago in an address before the American Academy of General Practice, we propose a carefully integrated two- or three-year training period to replace the internship. During this time, the student would actually do general practice in the protected atmosphere of a community hospital.

Stringent requirements are necessary to assure successful programs, but these requirements can be met. In essence, they are simply these:

1. The trainee should treat a wide variety of patients under adequate supervision. This supervision must be partly at the discretion of the student and partly a general review by his mentor. The balance between these factors is delicate, but it can be achieved to the delight of the student and to the relief of the hospital's senior staff.

2. The trainee should have opportunities for sequential observation of patients over protracted periods. He should build up a small but representative practice among the hospital's clientele, and should commence to learn the demands of longitudinal patient responsibility.

3. Old, rigid divisions between inpatient service assignments should be broken down to permit the trainee to grasp the continuity and similarities among various aspects of medicine, rather than just to recognize their differences. It is perfectly logical to have a trainee serve concurrently on two services, provided that his time is protected and his teachers will adjust and integrate their efforts. A trainee can divide his time between medicine and pediatrics, or between psychiatry and medicine. General practitioners all do this, and the generalist-in-residence should start doing it at the first practical moment. Similarly, outpatient activities should be integrated with inpatient experience. Wherever possible, the trainee should follow his outpatients when they have to be admitted to the hospital. Furthermore, he should be enabled to follow interesting inpatients when they leave the hospital, and for as long thereafter as the trainee and his teacher feel is helpful.

THE GP RESIDENCY PROGRAM AT BROADLAWNS

These concepts are neither new nor revolutionary. They have been tried successfully, in one form or another, in many areas. Some medical schools have rebuilt their curriculums to minimize the divisions between clinical departments. Others have introduced clinics with multidisciplinary staffs to convey the concept of general medicine. The most successful faculties still actively "sell" the concept of general practice to their students. Private and public hospitals are giving interns the opportunity to follow patients for protracted periods of time.

Here in Iowa, we had an opportunity to start one of the newer postgraduate programs, the general-practice training program at Broadlawns-Polk County General Hospital, Des Moines. This program started almost two years ago, and incorporates the three essential features mentioned above.[1] It is designed to accommodate four trainees in each year of a two-year course of study. Starting with one trainee, the program has been expanded to six this year, and it will reach its full complement of eight in July, 1964.

The development of this program encountered some difficulties, but the experience of two years has convinced most of us involved in its structure that our original concepts were sound. It has proved a stimulating experience for the trainees. All have taken their responsibilities seriously and have matured as physicians at a rate surprising even to the most enthusiastic of their teachers.

No one would be so bold as to prophesy that this program is the ideal for postgraduate general-practice training, but I think progress has been made. Most educators feel that these programs are best located in community hospitals, rather than in the university-hospital atmosphere. It is probable that the student receives better teaching at the community level in his postgraduate experience, just as he obtains more efficient teaching at the university during his undergraduate years in medicine. There is no need for the generalist to compete with the specialist, either in training experience or in practice, and many feel that better

clinical teachers of general practice are provided in carefully planned community-hospital programs than in the departmental structure of a university. Ideally, the community hospital should be affiliated with a college of medicine, but the college teachers should assist in training the young generalist in the local atmosphere.

CONTINUING MEDICAL EDUCATION

A final word about continuing education is necessary. We all know its importance. The singular attitude of the American Academy of General Practice in making postgraduate education a prerequisite for the maintenance of membership deserves the highest praise. Other specialty groups in this country might well follow the AAGP's example. With such an attitude, with proper programs and with the cooperation of interested universities, I feel that the future for good general medicine is very bright indeed.

REFERENCE

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Statistics on MMA in Iowa

Mr. Lawrence Putney, chairman of the State Board of Social Welfare, said in mid-May that it seemed the number of recipients of Medical Assistance for the Aged in Iowa was leveling off. In January, bills were paid for 25 recipients, in February for 690, in March for 1,557, and in April for 2,447. He pointed out that some patients were counted in more than one month, if they needed continued services, and that many received services from more than one vendor.

During the first four months of the program, 9,201 claims totaling $563,036.85 were paid. Forty-eight per cent of the total, or $270,262.95, went to hospitals; 20.24 per cent, or $113,958.67, went to doctors of medicine; 15.77 per cent, or $88,800.22, went to nursing homes; 8.75 per cent, or $49,167.87, went to pharmacists.

As of April 23, there were 4,646 vendors participating in the Iowa MAA program, viz.:

Doctors of Medicine	1,659
Doctors of Osteopathy	283
Chiropractors	311
Pharmacists	696
Dentists	868
Nursing Homes	259
Hospitals	158
Podiatrists	81
Visiting Nurse Associations	16
Optometrists	298
Private-duty Nurses	17
	4,646

As of March 27, only 1.1 per cent of Iowans 65 or more years of age were receiving MAA, and the average age of recipients was 74.9 years. It was estimated that nearly 4,300 were receiving care under the program in April.

Statistics showed that women make up 59.6 per cent of those approved for MAA, though only 54.4 per cent of Iowa's aged are women. About 1.25 per cent of Iowa women over 65 have been approved for MAA, compared to 1.0 per cent of the men.

Nearly three-fourths of the MAA recipients live in their own homes, and most of the others live with a son or daughter or in a nursing home.

A majority of men receiving MAA are married, and a majority of the women recipients are widowed.

In addition to the MAA recipients, there are more than 28,000 persons currently receiving Old Age Assistance in Iowa. The two programs care for about 10 per cent of the population over 65 years of age. Surgery and hospitalization aren't provided under the OAA program, in most instances, but OAA recipients are eligible for hospitalization and medical and surgical care at University Hospitals or county hospitals.

The average recipient of Medical Assistance for the Aged in Iowa has an income of $72.30 per month, usually from Social Security, and owns property valued at about $2,700. The study of characteristics also indicated only 5.7 per cent were without any type of income, Mr. W. F. Rauscher, director of the Social Welfare Department's research division said.

Men have a higher median income, $89.50, than women, $57.60, the study indicated, and nearly three-fourths owned some personal property. About half have checking or savings accounts; 22.2 per cent have cars; 17.5 per cent have life insurance; and 8.1 per cent own bonds.

Less than half own real property, and the most common type of real estate is a homestead. Homeowners make up 44.4 per cent of the recipients. The median property owned by women is $2,766.50, and by men is $2,712.50.

Mr. Rauscher said it seems that nearly 40 per cent of MAA recipients could have qualified for OAA if they had chosen to apply for it.

Scientific Articles

Non-Metastatic Neuromuscular Disorders Associated With Cancer

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There is increasing evidence that a patient with cancer may suffer from various disorders of nerve and muscle which are not directly attributable to invasion or metastasis from the neoplasm.[1] Presumably, these disorders are secondary to changes in the metabolism of the body induced by the cancer, but other theories have been advanced and will be discussed.

The recognition of the neurologic complications is important for several reasons: (1) the clinical manifestations of these disorders may present prior to those of the cancer, and if recognized will stimulate a search for the neoplasm; (2) the disability and discomfort resulting from these disorders may temporarily outweigh those of the neoplasm; and (3) certain patients with these disorders are unusually sensitive to some muscle relaxants, and if these are used during surgical procedures, they may cause prolonged respiratory arrest.

CLASSIFICATION

It is difficult to classify these disorders, for there may be involvement of the central or the peripheral nervous system, of the myoneural junction, or of the muscles. Usually, there is a combination of these lesions. The following classification combines both anatomic and pathologic aspects of these disorders.[2]

TABLE I

NON-METASTATIC NEUROLOGIC COMPLICATIONS

I. Central nervous system
A. Neuronal degeneration
1. Subacute cerebellar degeneration
2. Mixed neuronal degeneration
B. White-matter degeneration (leukoencephalopathy)
II. Nerve roots and peripheral nerves
A. Sensory neuropathy
B. Polyneuritis
III. Muscles and myoneural junction
A. Polymyositis (dermatomyositis)
B. Myopathic-myasthenic syndrome

In the above classification, the categories designated as II and III are often grouped under the general term *neuromyopathy*. The use of this term also emphasizes the fact that there is frequently a combination of these lesions in a single patient.

INCIDENCE

The incidence of these disorders is difficult to establish. What may be considered the cachexia accompanying a malignancy may actually represent an atrophy of muscles secondary to a severe polyneuritis. Earlier studies of these disorders in patients with lung cancer yielded incidence rates of 1-2 per cent.[3-5] These were retrospective studies. Recently, a neurologic survey on male patients with lung cancer has shown an incidence of neuro-

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logic involvement as high as 16 per cent.[6] A similar survey of female patients with carcinoma of the breast revealed 4.4 per cent with neurologic complications.[6] These patients were compared with a control group consisting of 200 routine hospital admissions. The incidence of neurologic abnormalities in the control group was 1-2 per cent. Other notable findings in this survey were that the occurrence of neurologic abnormalities was not related to the time the patient was known to have carcinoma, that it was not related to the weight loss suffered by the patient, and that it was not related to the age of the patient.

Neuromyopathies have been reported with almost every type of carcinoma. Also, these disorders have been associated with Hodgkin's disease, leukemia, multiple myeloma and sarcoma. Carcinomas of the lung and breast have the highest incidences of these disorders. These neoplasms also have the highest incidences of metastases to the nervous system. Whether or not these two relationships are coincidental is not known.

CLINICAL AND PATHOLOGIC FEATURES

The clinical and pathologic findings vary as indicated in the classification. These disorders may occur prior to any signs of the neoplasm, and occasionally they occur after the neoplasm has been successfully eradicated. Rarely, the neurologic disorder may remit while the patient is becoming increasingly ill with the neoplastic disease.

The *cerebellar degenerations* are most frequently seen with carcinoma of the lung, breast or ovary. The progression is often quite rapid, so that the patient may become severely ataxic within a few weeks. The difficulty usually begins with unsteadiness of gait, followed by clumsiness and incoordination of the extremities. Dysarthria, vertigo and nystagmus may be present. Occasionally, in the "mixed" type, there may be pyramidal-tract and cortical involvement, with spasticity and signs of mental deterioration. Microscopic examination of the tissue shows severe loss of Purkinje cells in the cerebellum, with some evidence of meningeal and perivascular infiltrations.[7]

The *progressive multifocal leukoencephalopathies* are quite rare, and have been seen in the terminal stage of patients afflicted with Hodgkin's disease, leukemia or lymphosarcoma.[8] The clinical findings are those of a progressive asymmetric involvement of the cerebral hemispheres, so that hemiplegia progressing to quadriplegia, with aphasia and cortical blindness, is common. As the name indicates, there are multiple areas of demyelination varying in size and severity in the central nervous system. In these areas, there is overgrowth of glial tissue, with peculiar eosinophilic intranuclear inclusions within abnormal oligodendroglial cells.

The *neuropathies* may be predominantly sensory,[9] or more frequently of mixed motor and sensory types. Again, the highest incidence of this particular disorder is found in carcinoma of the lung. Sensory neuropathy may affect sensation to the point where the patient is quite helpless because of the loss of proprioception. Even the face and trunk may be affected with sensory loss in this disorder. A pure *sensory neuritis* is a rare clinical finding, and its occurrence should always raise the diagnostic possibility of an unsuspected neoplasm. The *polyneuritis* is not distinctive, and may resemble that seen in a diabetic or alcoholic patient. There are paresthesias in the hands and feet, sensory changes, muscle weakness and wasting, and depression of the reflexes.

Polymyositis, with or without concomitant skin changes (dermatomyositis), may be associated with carcinoma. The clinical features in patients with polymositis and malignancy are usually indistinguishable from those in patients with polymyositis alone. The muscles are symmetrically weak and tender, and the proximal limb and girdle musculatures are most severely affected. Involvement of the neck muscles is frequent. The skin changes vary from edema and erythema to desquamation. The muscle fibers show degeneration, infiltrates of inflammatory cells, increase in sarcolemmal nuclei, and regeneration. In a survey of 590 patients with dermatomyositis collected from published case reports, carcinoma of some type had occurred in 15 per cent.[10]

The *myopathic syndrome* is frequently associated with weakness and wasting, usually most severe in the limb girdles and proximal limb musculature. Usually, the lower extremities are involved before the uppers. Fasciculations are usually absent. The tendon reflexes are diminished or lost. The histologic changes of degeneration are slight, compared to the clinical picture. There is no involvement of the peripheral nerves. In general, the muscles are not so tender as in the polymyositic variety, and the neck muscles are not so frequently involved.

In a few patients with carcinoma, particularly of the lung, a *myasthenic component* may be added to the muscle weakness. The histologic alterations in muscle are quite slight, so that the disturbance is probably a biochemical defect at the neuromuscular junction. This situation may be produced inadvertently when muscle relaxants such as curare, suxamethonium and gallamine are used, and a severe and prolonged respiratory paralysis follows.[11] Anticholinesterase agents such as prostigmine correct some of the weakness, but have not been very useful in the long-term care of these patients. Anesthesiologists should be cognizant of this possible complication when they care for a patient with a carcinoma, particularly one with a known neuromyopathy.

CASE REPORT

The following case report is that of a carcinomatous myopathy. The generalized weakness was originally construed as cachexia secondary to the lung neoplasm.

A 74-year-old white male noticed the insidious onset of right shoulder pain during the spring of 1963. Over the ensuing months, the pain radiated into the right arm. He did not have pain or stiffness of the neck. He had a chronic cough, but denied hemoptysis. A 40-pound weight loss occurred during the two months prior to his admission.

He appeared chronically ill, and showed evidence of severe weight loss when examined on October 15, 1963. A firm, irregular mass of lymph nodes was palpable in the right supraclavicular area. Diminished breath sounds and rales were heard at the right base. The percussion sound was also diminished at the right base. The cranial nerves were intact. There were weakness and wasting of the right arm, implicating an inferior brachial plexus lesion. There were minimal generalized muscle weakness and wasting in the other girdle and extremity muscles. No fasiculations were seen.

Roentgenograms of the chest showed a right pleural effusion. Cytology of the pleural fluid was reported as containing malignant cells. A right supraclavicular node biopsy revealed a poorly differentiated adenocarcinoma. The motor and sensory nerve-conduction velocities were normal in the left median and ulnar nerves. The right median sensory potential could not be obtained, but the other motor and sensory nerve-conduction velocities were normal in the right arm. The motor conduction velocities were normal in the right and left peroneal and tibial nerves. Electromyography in the *right* thenar area showed a neurogenic interference pattern, and fibrillations were present at rest. EMG in the *left* thenar area, left forearm flexors, left triceps muscle, and left and right quadriceps muscles showed a pattern associated with myositis. The biopsy showed patchy degeneration of the muscle fibers, with floccular changes and phagocytosis (Figure 1). No significant interstitial or perivascular cellular infiltration was present. No abnormality of the intrinsic nerve fibers and their endings was detected by Bodian and Bielschowsky stains. Electromyography had not been done in the left palmaris longus.

COMMENT

This case illustrates the combination of lesions that can be found in a patient with carcinoma. The atrophy of the right arm was due to carcinomatous invasion of the brachial plexus. The weakness and wasting in the other extermities were found to be resulting from a muscle disorder fitting into the category of a non-metastatic carcinomatous neuromyopathy. The EMG and the pathologic findings were not in agreement as to the type of muscle disorder—the former favoring a myositis and the latter favoring a myopathy—but both were indicative of a primary muscle disorder.

DIAGNOSIS AND TREATMENT

The differential diagnosis of the neurologic complications naturally depends on the portion of the nervous system affected. The leukoencephalopathies and cerebellar degenerations may closely simulate the picture commonly seen with cerebral and cerebellar metastases. The neuropathies may resemble any of the common causes of neuritis, such as diabetes, alcoholism, nutritional deficiencies and collagen vascular diseases. Occasionally, in a patient with a neoplasm, the picture of a peripheral neuritis may be simulated by widespread metastatic implants in the nerve roots.[12] Spinal-fluid findings in the carcinomatous neuromyopathies are rather non-specific, with a slight increase in the protein content and cell count.

The treatment of these disorders is, unfortunately, symptomatic. Even the eradication of the neoplasm does not assure the patient's recovery from the neuromyopathy. Vitamin therapy, which

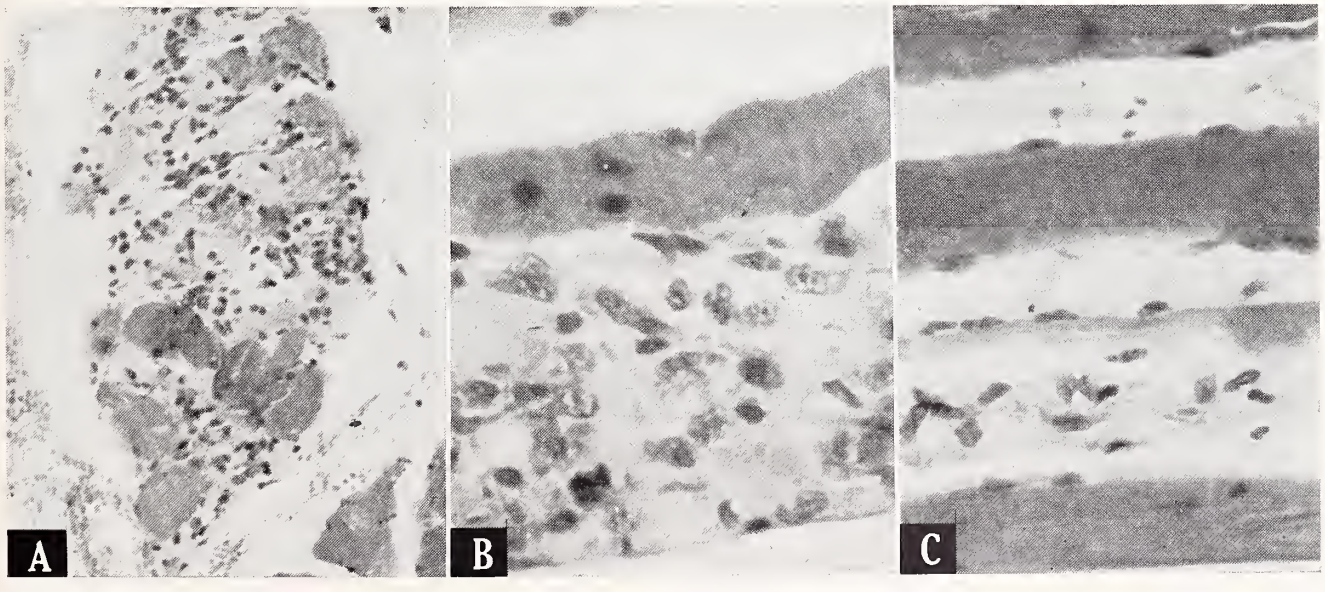


Figure 1. Left palmaris longus muscle, showing (A) an area of degeneration (× 125); (B) phagocytosis (× 320); and (C) degeneration of a single muscle fiber (× 320).

is often helpful in many of the malnutrition neuropathies, is of little benefit. Hopefully, the proper recognition of these conditions may lead to an earlier diagnosis of the underlying neoplasm and to a more prompt treatment.

ETIOLOGY

The etiology of these disorders is obscure. Apparently they are not due to nutritional factors, for they often appear in cancer patients who are otherwise quite well and are on an adequate diet. The lack of association between these disorders and the size and duration of the neoplasm casts some doubt upon the idea that an antimetabolite from the neoplasm is affecting the nervous system. The presence of inflammatory cells around the neural lesion in some of these disorders has suggested the possibility of an accompanying viral infection. There are no good virologic studies to support this proposal. It is more likely that the inflammatory cells are a non-specific response of the nervous system to a degeneration. Disorders of protein metabolism have also been cited as a cause of these disorders, for neuromyopathies have occurred in multiple myeloma, with its associated dysproteinemia.[13] It has also been suggested that these disorders may have a vascular component because of their similarity to neuropathies of diabetic and collagen vascular disease origin.[14] It is interesting that Weisenburg,[15] in 1906, mentioned carcinomatous multiple neuritis, and suggested that it was due to a circulating toxin. That suggestion seems to be as adequate as any offered today.

SUMMARY

Many disorders of the nervous system may be found in association with carcinoma, and many of these are not caused by direct or metastatic invasion. These non-metastatic neurologic complications are seen with almost any type of cancer, but especially with those of the lung and breast. These disorders may be degenerations of the cerebral white matter, cerebellar degenerations, peripheral neuropathies, myopathic disorders and myasthenic states. The recognition of these disorders may lead to earlier diagnosis of the underlying neoplasm. Various etiologies have been suggested for the occurrence of these conditions, but the exact cause remains unknown.

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Mothers Assist in Care of Child Patients

At the Boston Floating Hospital, the pediatric unit of the Tufts New England Medical Center, mothers are being permitted to live-in with the patients, in a pilot study financed by a federal research grant. The experiment is reported in the issue of HOSPITALS that was published on July 1.

Each of four single rooms adjacent to every nursing-care area contains a crib or bed for the child, a studio couch for the mother, and a snack-stocked refrigerator, hot plate and toaster for the mother's personal use.

The mother works with the nursing and medical staff in a close relationship, providing many of the services that she would normally provide for the child at home. From 5 p.m. to 8 a.m., the mother assumes full responsibility for the child, calling the nursing supervisor only if necessary. The mother's constant presence lightens the nurses' load, lowering hospital rates $5 per day for the child. There is no charge for the mother's food or room. The father can replace the mother to give her time off.

These special units are apart from the regular wards to provide greater privacy. Children who are patients in the special section seem less restless, have better appetites and are more content, the staff members report.

Geneva Katz, R.N., author of the report, says, "We believe a mother usually is a capable 'nurse' when her child is ill at home. In our program, the mother's special abilities are coordinated with those of the nurse."

Cervical Cytology During Pregnancy

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Dr. George Papanicolaou first described the potential of vaginal exfoliative cytology in the diagnosis of uterine cancer during 1928. However, no use was made of that information until late in the 1940's. In the last 15 years, it has been subjected to the scrutiny, criticism and objections of many scientists, pathologists and clinicians. Its acceptance has been relatively slow, but its value has been firmly established in the minds of most clinicians. A vast literature has accrued concerning the value of exfoliative cytology in detecting unsuspected carcinoma of the uterine cervix.

Invasive carcinoma of the cervix represents 11 per cent of all carcinomas that affect women. At the present time, less than 50 per cent of the patients in whom cervical carcinoma is diagnosed are cured. With a more widespread use of routine cervical cytology, however, it would be possible to approach 100 per cent curability.

The use of cytology during pregnancy has also had a slow acceptance by the medical profession. At first, there was considerable doubt as to whether carcinoma *in situ* of the cervix could be detected and correctly interpreted during pregnancy. Currently, many clinics are using cytology routinely in pregnant women, and believe that vaginal cytology and cervical histology can be correctly diagnosed during pregnancy. A review of the S.U.I. experience with routine cervical cytology may be of value, since the majority of obstetrical patients there are not seen early in pregnancy, but are seen two weeks prior to delivery.

MATERIALS AND METHODS

The patients included in this study were all obstetrical patients seen at the University Hospitals from January 1, 1960, through December 31, 1962. The total number of patients in whom at least one smear was obtained was 6,804. So that a true incidence of carcinoma of the cervix associated with pregnancy might be ascertained, all pregnant patients who had been referred to University Hospitals because of a cervical lesion were excluded from the study.

A single smear was obtained from the cervix at the time of the patient's initial examination. The trimester of pregnancy during which the smear was taken varied with the time of the patient's initial registration. Early in pregnancy, the smear was obtained with an Ayres spatula. Later in pregnancy, the smear was obtained from the cervix and squamo-columnar junction with a cotton-tipped applicator. At University Hospitals, some patients are admitted in labor, without having been examined previously. In these patients, a cytologic smear is obtained at the time of the discharge examination. In spite of the lochia in these patients, abnormal cells have been detected, and significant pathology has been subsequently diagnosed. Several patients of this sort have been included in the present study.

Evaluation of suspicious or positive smears or of suspicious lesions of the cervix during pregnancy was carried out by means of repeat smears and four-quadrant punch biopsies. In our series of patients, none required conization of the cervix during pregnancy. In the postpartum period, evaluation was carried out by means of repeat cell studies, cervical biopsies and cold-knife conization of the cervix.

RESULTS

Of the 6,804 patients who were evaluated by means of cervical cytology, 53 had suspicious (Papanicolaou Class III) or positive (Papanicolaou Class IV or V) smears initially or on repeat studies. The average age of these patients was 27.5 years, and the average parity was 3.4.

Carcinoma *in situ* was diagnosed in 25 patients with an average age of 28.5 years and an average parity of 3.8. It is significant to note that 15, or 60 per cent, of these patients were less than 30 years of age. Invasive carcinoma was found in five patients, although in only one instance was a significant lesion noted on inspection. The average age of these patients was 32.2 years, and the average parity was 4.

The initial cytologic smear was suspicious or positive in 20 of the 25 patients with carcinoma *in situ*. Four had atypical smears, and this fact emphasizes the importance of follow-up and repeat studies in these patients. There was only one known false negative in this series—in a patient

Dr. Luhman is a private practitioner of obstetrics and gynecology in Iowa City, but he was a resident at the S.U.I. Hospitals when he participated in the work described here. Miss Pixley is a cytologist at S.U.I.

who was later found to have carcinoma *in situ* of the cervix following a cesarean hysterectomy. Those with invasive carcinoma followed a similar pattern. Three of the five had suspicious or positive smears. Of the other two, one had had an atypical smear, and the other, the patient with the obvious necrotic lesion of the cervix, had been missed because the smear contained insufficient cells for diagnosis.

There were 15 patients with suspicious or abnormal cells, but subsequent smears reverted to normal, or extensive studies revealed less than carcinoma *in situ* of the cervix. Eleven patients with suspicious smears were lost to follow up. There was a total of 41 patients with suspicious or abnormal initial smears, and 23 of them, or 56 per cent, had preinvasive or invasive carcinoma of the cervix.

INTERPRETATION OF CYTOLOGY IN PREGNANCY SMEARS

Normal: The vaginal smear during pregnancy reflects the presence of progesterone and estrogen, and it therefore resembles the smear of the corpus-luteum phase of the cycle. There is an increase in the rate of cellular proliferation in the stratified squamous epithelium and a decrease in the amount of surface maturation. The upper layer of the stratified squamous epithelium contains an increased number of somewhat immature cells, and fewer mature squamous cells. Superficial squamous cells are infrequent after the second or third month. Desquamation becomes increasingly marked as the pregnancy progresses. Clustering and folding of cells occur. Many of the folded cells assume a navicular shape. These cells often appear to have more distinct cell borders (doubly refractive), and larger, slightly hyperchromatic granular nuclei, peripherally or centrally positioned. The cytoplasm stains cyanophilic or basophilic, and is often vacuolated. There is clear endoplasm containing glycogen about the nucleus, and a thin rim of condensed matrix (ectoplasm) at the periphery of this zone. Endocervical cells may appear in large numbers in cervical smears, may be larger than normal, will often have mucoid cytoplasm, and may have prominent granular nuclei. All these changes are probably related to hyperplasia of endocervical lining cells and glands, and may also reflect "eversion" of the endocervix and have a rim of endocervical tissue around the external os.

Trophoblastic cells of the syncytial type are only rarely seen in normal pregnancy, but do occur in abortion. We don't recognize any cellular changes that can be considered diagnostic of abortion. Smears obtained during abortion, however, may contain navicular cells, blood, inflammatory exudate, and trophoblastic cells which are large, irregular and basophilic, with poorly preserved cytoplasm and with numerous nuclei superimposed on one another. If pregnancy is associated with bleeding (especially in early stages), and if there is a preponderance of superficial squamous cells with pyknotic nuclei (usually indicating excessive estrogenic activity), inevitability of abortion is suggested. In the first trimester, basophilic superficial squamous cells can be present, but they do not usually exceed 20 per cent of the total cell count. The presence of these cells in greater numbers suggests the possibility of a progesterone deficiency and threatened abortion. On the other hand, a preponderance of navicular cells may indicate no immediate threat of abortion.[11] We consider these observations (which have been extensively reported by others) to be more of academic interest than of practical assistance to the clinician.

On rare occasions, it is possible to identfy decidual cells which appear as polygonal, eosinophilic cells with vesicular nuclei. These may be from foci of decidua within the cervix, rather than from endometrial stromal cells at or near the site of implantation of the ovum.

The pregnancy at term often is signalled by the reappearance of cornified superficial squamous cells (an increase in the eosinophilic index). Rupture of fetal membranes may be suspected if small anucleated squamae of vernix caseosa are found in the vaginal smear.[16] The staff at S.U.I. haven't yet fully ascertained the practical value of this.

Cytology of postpartum smears (four to eight days postpartum) is characterized by numerous large, pale-staining, ovoid and elliptically shaped ("oyster-shaped") cells. Often these show a heavy peripheral cytoplasmic rim and large perinuclear vacuoles. The staining reaction is variable, some cells staining basophilic and many others staining acidophilic. Smaller (parabasal) cells from the deep layers are present, and frequently contain glycogen in their cytoplasm. Mucus, numerous leukocytes and histiocytes, erythrocytes and blood pigment are also common. There is rapid desquamation of the superficial and intermediate cells.[14]

Atypias: Dr. L. G. Koss has said, "Atypias of pregnancy including inflammation and neoplastic processes are those of the female genital tract irrespective of pregnancy."[11] The S.U.I. experience has completely supported that statement.

The origins of inflammatory processes within the lower genital tract are chiefly viral, bacterial (cocci), fungal (Monilia albicans) or parasitic (Trichomonas vaginalis). The epithelial changes accompanying inflammation may result in considerable cytologic atypias in the squamous epithelium of the vagina and cervix, as well as in the glandular epithelium of the endocervix. Smears contain innumerable polymorphonuclear leukocytes. Debris and large sheets of necrotic cells are common. Phagocytosis and excessive cytolysis are seen. Clumps of bacteria and/or numerous trichomonads are found. There is excessive eosinophilia, especially in trichomoniasis, involving the normally

basophilic cells—intermediate and parabasal (nuclei showing pyknosis, and karyorrhexis accounting for the irregularity of nuclear outline). An increased shedding of parabasal cells from superficial erosions and ulcerations may result in the exposure of deeper epithelial layers. Lack of internal structure in pyknotic nuclei and the preservation of a normal nuclear cytoplasmic ratio have to be noted if one is to avoid mistaking these cells for the more significant dyskaryotic ones. Nuclei of degenerating cells are generally surrounded by narrow, clear cytoplasmic zones (halos). Binucleation and cellular enlargement may be present.

One can often detect inflammation of the endocervix by noting the striking enlargement of endocervical cells and nuclei. Nuclei may contain numerous chromocenters, and one or more conspicuous "red" nucleoli. It is something difficult to distinguish these cells from the cells of adenocarcinoma. Multinucleated endocervical cells occur, and nuclei stripped bare of cytoplasm are common.

When chronic cervicitis is present, small cells can appear in smears as well-differentiated "miniature" superficial squamous cells without distinguishing features. There may also be excessive keratinization. One of the indices of healing of inflamed squamous epithelium is evidence of the formation of a somewhat atypical epithelial surface composed of several layers of flat, small cells. Plasma cells and lymphocytes are the predominant inflammatory cells. Proliferation of endocervical cells, akin to basal hyperplasia of squamous epithelium, may result from chronic inflammation. Several layers of small, poorly-differentiated endocervical cells are found beneath the columnar cells, and explain the atypia seen in smears. When basal-cell hyperplasia is prominent, the smears contain clusters of endocervical cells with scanty cytoplasm, and with nuclei varying in size and shape, and showing mitotic activity. To determine their type, one must compare these cells with the well-differentiated columnar cells that can be found at the periphery of such clusters.

Squamous cells of the size of parabasal cells originate in squamous metaplasia which has not reached complete maturation. Sheets of cells with abundant eosinophilic cytoplasm appearing adjacent to clusters of endocervical cells are characteristic of this condition. Degenerating endocervical cells with vacuolated cytoplasm infiltrated with leukocytes may also have prominent chromocenters. The picture is thus confused, for these resemble the cells of adenocarcinoma of the cervix. Spindly squamous cells with thin, slender nuclei are sometimes present in cervical smears. These must be differentiated from squamous-cell carcinoma.

In all varieties of intra-epithelial carcinoma, significant cytologic abnormalities are evident to a greater or lesser degree—i.e., nuclear hyperchromasia, irregularity of nuclear outline, giant nuclei, abnormal and/or infrequent mitoses at all levels of the epithelium, and often abnormal keratinized cells on the surface. In the late stages of pregnancy, cytolysis may be so extensive that only the nuclei of carcinoma cells remain. In such situations, the diagnosis of cancer may be more difficult. In addition, it may be most difficult to distinguish among the severe dyskaryosis of carcinoma *in situ*, the less severe dyskaryosis of dysplasia, and even invasive carcinoma. Dyskaryosis is seen frequently in pregnant smears. Since it is often associated with intraepithelial carcinoma of the cervix, but can also be found with dysplasia, epidermidization and basal-cell hyperactivity, care must be taken to distinguish the type of dyskaryosis involved.[24]

There is growing evidence that the atypical tissue and cellular changes associated with pregnancy do not differ basically from those found in the non-pregnant state, but the frequency as well as the severity seems greater in the younger age group.[14]

MANAGEMENT

Of necessity, the management of pregnant patients with abnormal cytologies varies from the management of gynecologic patients. In an attempt to substantiate the abnormal cytology, four-quadrant cervical biopsies were obtained. Schiller's test with Lugol's solution was used occasionally, and areas that did not stain were biopsied.

Patients with negative biopsies were followed until the postpartum period, and then they were reevaluated by means of repeat smears, biopsies and conizations. Patients without visible clinical lesions on the cervix, but with biopsies showing carcinoma *in situ*, were followed carefully and were allowed to deliver vaginally. Definitive treatment was carried out six weeks postpartum. A conization of the cervix would have been carried out during pregnancy if there had been a suspicious erosion or lesion of the cervix.

The treatment of invasive carcinoma of the cervix at S.U.I. is by irradiation therapy, including radium application to the cervix. The management of a pregnant patient varies, depending upon her trimester of gestation. If the patient is in the first trimester, she is started on external therapy. Spontaneous abortion usually occurs during this course of irradiation. From a patient in the second or third trimester of pregnancy, the fetus is delivered by hysterotomy, and irradiation therapy is started after the termination of the pregnancy.

Cases of carcinoma *in situ* diagnosed during pregnancy or in the postpartum period were treated by hysterectomy six to eight weeks postpartum, if invasive carcinoma had been adequately ruled out by conization or adequate biopsy. Therapeutic conization of the cervix was performed on those patients who desired further childbearing. Those women are being followed carefully by

means of repeat smears. They are encouraged to complete their childbearing soon, and they will then be treated definitively by hysterectomy.

DISCUSSION

There has been much disagreement concerning the importance of atypical cellular changes of the cervix during pregnancy. Epperson and associates,[7] in 1951, reported five cases of carcinoma *in situ* of the cervix during pregnancy. All five patients had normal biopsies in the postpartum period. The investigators believed that the diagnosis of carcinoma *in situ* could not be made during pregnancy. Nesbitt and Hellman,[15] in 1952, reported cervical-tissue studies in 300 pregnant women, and found two cases of carcinoma, three of cellular anaplasia, and 20 cases of hyperactivity of the basal-cell layer, all of which disappeared by six months postpartum.

Campos and Soihet,[2] in 1956, studied the histologic structures of multiple biopsies from the cervices of 200 pregnant women. In 10 cases, or 5 per cent, the histologic alternations were indistinguishable from those of carcinoma *in situ*. In all cases, however, complete reversion to normal occurred postpartum. They stated that an epithelial hyperplasia or atypical metaplasia is a transitory change during pregnancy which disappears postpartum. They also found that squamous metaplasia, hyperplasia of the basal-cell layer and glandular hyperplasia were more frequent in pregnant than in non-pregnant women.

Danforth[5] compared histologic findings in pregnant and non-pregnant cervices. He found that no changes occurred in the pregnant group which could not also be found in the non-pregnant. The changes found *more frequently* in the pregnant cervices included the following. There were more frequent slight to moderate irregularities in size, shape and staining qualities of basal-zone nuclei; mitotic figures were five times more frequent, and tended to occur higher in the basal zone; epithelial downgrowths were found in the stroma; there were multiple nuclei and coarsely granular chromatin clumps; active nuclei were found in the mid-zone and squamous metaplasia; and subepithelial inflammatory reaction occurred at the squamo-columnar junction.

Other investigators have found no regression of significant lesions of the cervix. Beecham and Emich[1] reported on seven cases of carcinoma *in situ* which did not change following pregnancy. Marsh and Fitzgerald[13] studied 4,067 pregnant women, and found two invasive carcinomas and 20 carcinoma *in situ* lesions, all of which persisted up to 31 months after delivery.

Peckham and Green,[17] in 1957, reported that epithelial abnormalities of the cervix showed regression in a smaller percentage of patients following pregnancy than did a follow-up of non-pregnant patients with similar lesions. The incidence of persistent preinvasive carcinoma, as accumulated in the literature, shows that 90 of 122 cases of carcinoma *in situ* diagnosed during pregnancy persisted after the termination of pregnancy.[8] This finding compares very closely with the usual experience reported in gynecologic patients. Recently, Schulman and Ferguson[20] again confirmed the fact that intra-epithelial carcinoma of the cervix does not regress postpartum.

The published studies of cervical cytology taken during pregnancy are summarized in Table 1. The percentage of significant findings varies greatly in the various studies, probably because most of the studies involved relatively small numbers of pa-

TABLE 1

	Number of Patients	Positive & Suspic. Smears	Number With Ca in Situ	Number With Carcinoma	Per Cent With Ca in Situ & Carcinoma	Aver. Age With Ca in Situ
Cuyler et al.,[4] 1951	1,451		17	0	1.2	
Hirst & Brown,[9] 1952	2,156	25	0	1	.05	
Varangot et al.,[23] 1955	1,953	52	10	13	1.18	
Carter et al.,[3] 1956	6,500		38	21	.91	29.8
Malinconico,[12] 1957	680	17	4	1	.75	28.8
Slate et al.,[21] 1957	5,935		13	1	.24	26.9
Schmitz et al.,[19] 1960	10,369	105	13	12	.24	
Spujt et al.,[22] 1960	3,300	33	7	0	.21	30
Wright,[25] 1961	3,295	10	9	1	.30	31.9
Rutledge et al.,[18] 1962	3,873	64	16	6	.57	
Kaminetzky & Swerdlow,[10] 1962	8,600		12	0	.14	
Dean et al.,[6] 1962	8,939	63	28	2	.34	27
Present Study	6,804	53	25	5	.44	28.5
Total	63,855		192	63	.40	

tients, and when considered individually they are of limited significance in an evaluation of a screening-type test. The numbers of patients in the separate studies total 63,855. Of those, 192 were found to have carcinoma *in situ*, and 63 were found to have invasive carcinoma. Thus, 0.4 per cent were found to have premalignant or malignant disease of the cervix.

We believe it has been well established that there are no specific changes of the cervix during pregnancy, and that a diagnosis of carcinoma *in situ* made during pregnancy is as important as one made in a non-pregnant patient. In our series, the only complication in the diagnosis of cervical cancer in a pregnant patient was in regard to endocervical glandular hyperplasia, which is common during pregnancy and may be quite marked. The problem arose in differentiating it from the very infrequent adenocarcinoma of the endocervix.

Controversy has also arisen in regard to the means of diagnosis. At University Hospitals, cervical conization is done during pregnancy only on patients in whom it is thought essential for diagnosis. The staff members are concerned about excessive bleeding and about producing abortions in these patients, although several studies have reported no increase in the complication rate in pregnant patients. Punch biopsy of the cervix is the diagnostic technic routinely employed, and conization is carried out during pregnancy only if there is reason to doubt the diagnosis—for example, where a diagnosis of carcinoma *in situ* has been made, and there is a significant lesion on the cervix. There is then a possibility that invasive carcinoma is present but has not been included in the biopsy. When the cervix is well epithelialized, conization of the cervix is not thought essential as a means of ruling out invasive carcinoma.

The importance of cervical cytology during pregnancy and in the younger patients cannot be overemphasized. Dean *et al.*,[6] at the University of Colorado, found abnormal cytologies occurring in seven of every 1,000 pregnant patients, and only slightly less frequently than Rh sensitization and rheumatic heart disease, each of which occurred at the rate of eight per 1,000 patients. The incidence of carcinoma *in situ* was much greater than the incidences of syphilis and tuberculosis, for which we carry out routine screening tests.

SUMMARY

1. Cervical cytologic smears were used in evaluating 6,804 pregnant patients.

2. Twenty-five patients were found to have carcinoma *in situ*, and their average age was 28.5 years.

3. Invasive carcinoma was diagnosed in five patients.

4. This is an incidence of 0.44 per cent, or one in every 225 patients, of premalignant or malignant disease of the cervix during pregnancy.

5. Abnormal smears and carcinoma *in situ* diagnosed during pregnancy are thought to be just as significant as they are in non-pregnant patients.

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Fractures in Children: Fundamentals of Management

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MANAGEMENT OF FRACTURES in children can be easy, enjoyable and gratifying. Although the results are generally good if only a few fundamentals are skillfully applied, one must be acutely aware of the fact that abandonment of these principles can result in sheer disaster.

With few exceptions, fractures in children are due to simple injuries, rather than to the complex mechanical forces by which adults manage to break their bones. Accordingly, the methods of treatment are simpler in most instances. The majority of fractures in children are of the long bones. Minor twists and falls are often responsible, as opposed to the comparatively major violence required to break a child's ribs, spine or pelvis. In contrast to fractures in adults, the types of breaks seen in children are characteristic, the prognosis is well known, and the principles of treatment are universally accepted.

The diagnosis of a fracture in a child is, at times, much more difficult than in an adult. First of all, an accurate history may be impossible to obtain, and therefore the exact mechanism of the injury is unavailable. Second, the examination of an apprehensive child may tax the patience and ingenuity of the physician. Finally, radiographs of certain areas in children's bones are difficult to interpret. In infants, the ends of long bones are still unmineralized cartilage which does not cast a dense image on the x-ray plate. Fractures and epiphyseal separations in such areas are easily misinterpreted, many times at the expense of a permanent functional loss to the child.

Greenstick fractures (Figure 1), wherein one cortex is slightly "wrinkled," are common injuries in children. These are easily overlooked, and are often misinterpreted as sprains. It is true that they are not displaced and that they heal rapidly, even without immobilization, but most of them should be treated to relieve pain and to prevent further displacement. Furthermore, there are several areas in bone which may be mislabeled as fracture in a child who has fallen and sustained only a contusion of the soft parts. These include epiphyseal lines (Figure 2), growth-arrest lines, accessory centers of ossification, nutrient canals and congenital defects. Many puzzling diagnostic problems can be solved by a careful evaluation of roentgenograms taken in at least two projections at right angles to one another (AP and lateral views) (Figure 3). A careful comparison of these with comparable views of the opposite, uninjured part is a most important step in the proper evaluation of many children's fractures (Figures 4 and 5).

The goal in fracture treatment is to obtain a rapid union of the fragments in a satisfactory position, and to restore function to the involved part in the shortest possible time. This must be done by the method which is least hazardous to the patient. If displacement has occurred, one must first

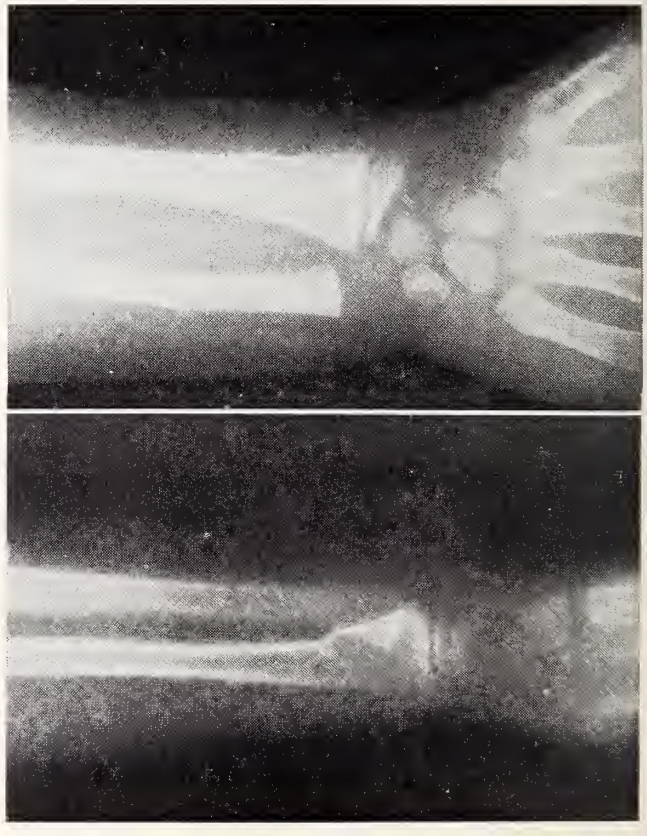


Figure 1. AP and lateral views showing "wrinkled" cortex of a greenstick fracture of the distal radius.

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Figure 2. AP of shoulder showing irregular epiphyseal lines of humeral head, acromion and coracoid. These are easily mistaken for fractures in a child who has fallen and contused the shoulder.

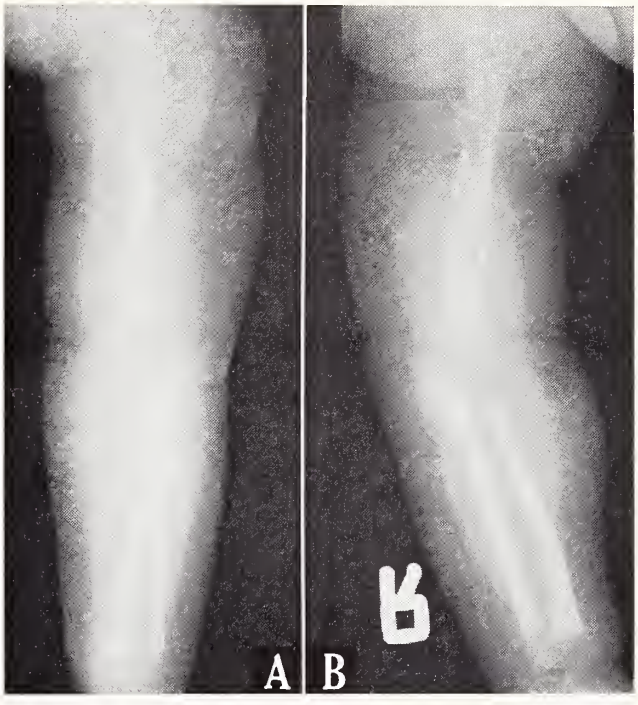


Figure 3. (A) An AP view of the humerus which might be interpreted as negative until a lateral view (B) is obtained and a spiral fracture of the humerus is clearly demonstrated.

reduce the fracture—i.e., bring the fragments into proper relationship with each other. They must then be fixed in this position and immobilized until they are firmly united.

Before satisfactory treatment can be provided, the fears and apprehensions of the child must be dispelled, and he must be given relief from pain. If reduction is necessary, proper sedation or anesthesia is essential. In the older, cooperative child, one can infiltrate the fracture hematoma with a local anesthetic. Two points must be stressed in relation to this technic. First, unless the tip of the needle is in the fracture hematoma, as evidenced by an aspiration of blood, the anesthesia will be inadequate. Second, this must be done with the most rigidly sterile technic, after a thorough preparation of the skin. Local infiltration increases the risk of infection, with all of its disastrous sequelae. If a general anesthetic is to be used, a reasonable time lapse should have occurred since the child last ate. This interval is necessary in order to decrease the risk of aspiration, and since children are constantly eating, one must assume that the moment of fracture was the last time the patient ingested food.

In the management of a fracture in an infant, one must be ever mindful that bone is a dynamic, growing structure. Growth may be a useful ally in the correction of residual displacement in certain instances, but at other locations, it acts as a potential enemy by exaggerating the deformity as time elapses. This is especially true following injuries where the epiphyseal plate was damaged. It is mandatory that the physician be aware of the rather predictable influence of growth on various deformities.

In many fractures in children, one has more leeway than in adults as regards the accuracy of replacement of the bone fragments. There are, however, certain requisites for acceptable reduction. These are as follows, in the order of their importance:

1. *Alignment.* The restoration of alignment is the most important requirement. Malalignment can be resolved into two components, again listed in the order of their importance:

a. Rotatory malalignment. This is displacement of one fragment with relation to the other as a result of its rotation around the longitudinal axis of the bone. A fracture left in such a position will heal, and unfortunately, growth will do nothing to correct the resultant deformity. In many instances, such displacement can be detected clinically by an inspection and palpation of the part. In a fracture of the femoral shaft, for example, if the toes are pointing backwards, one would logically suspect rotatory malalignment. Sometimes one can detect minor degrees of malrotation roentgenographically by observing the configuration of the fragments and by comparing the width of the bone, the width of the cortex, and the width of the medullary canal of the proximal fragment with those of the distal (Figure 6). These measurements are taken immediately adjacent to the fracture, and if rotatory alignment has been restored, the measurements of the proximal and distal fragments should be identical.

b. Angulatory malalignment. This is displacement of one fragment in relation to the other by rotation around an axis at a right angle to the shaft of the bone (Figure 7A). Although this is the sec-

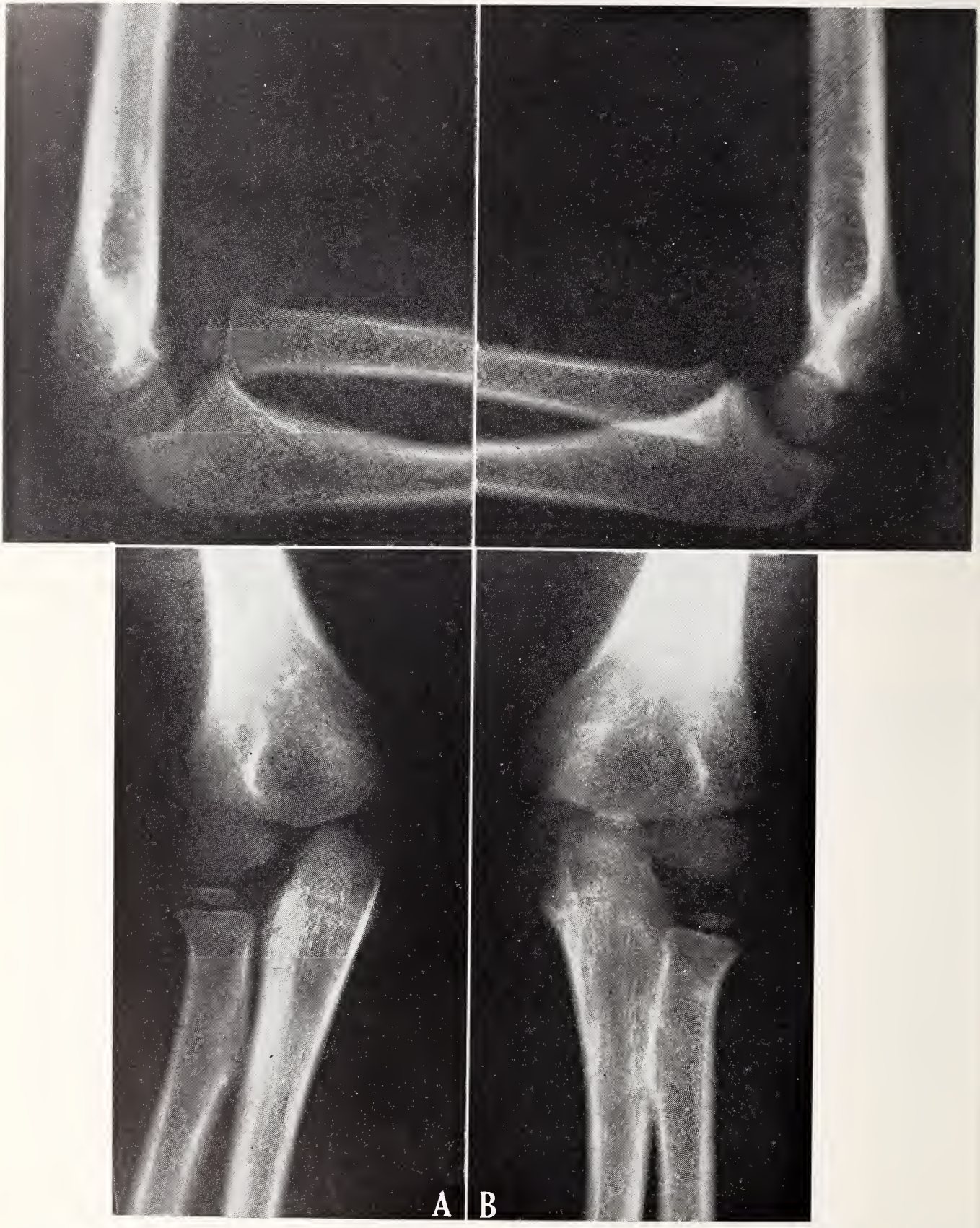


Figure 4. (A) AP and lateral views of injured right elbow. The anteriorly displaced radial head might well be missed unless comparable views of the left elbow (B) are seen.

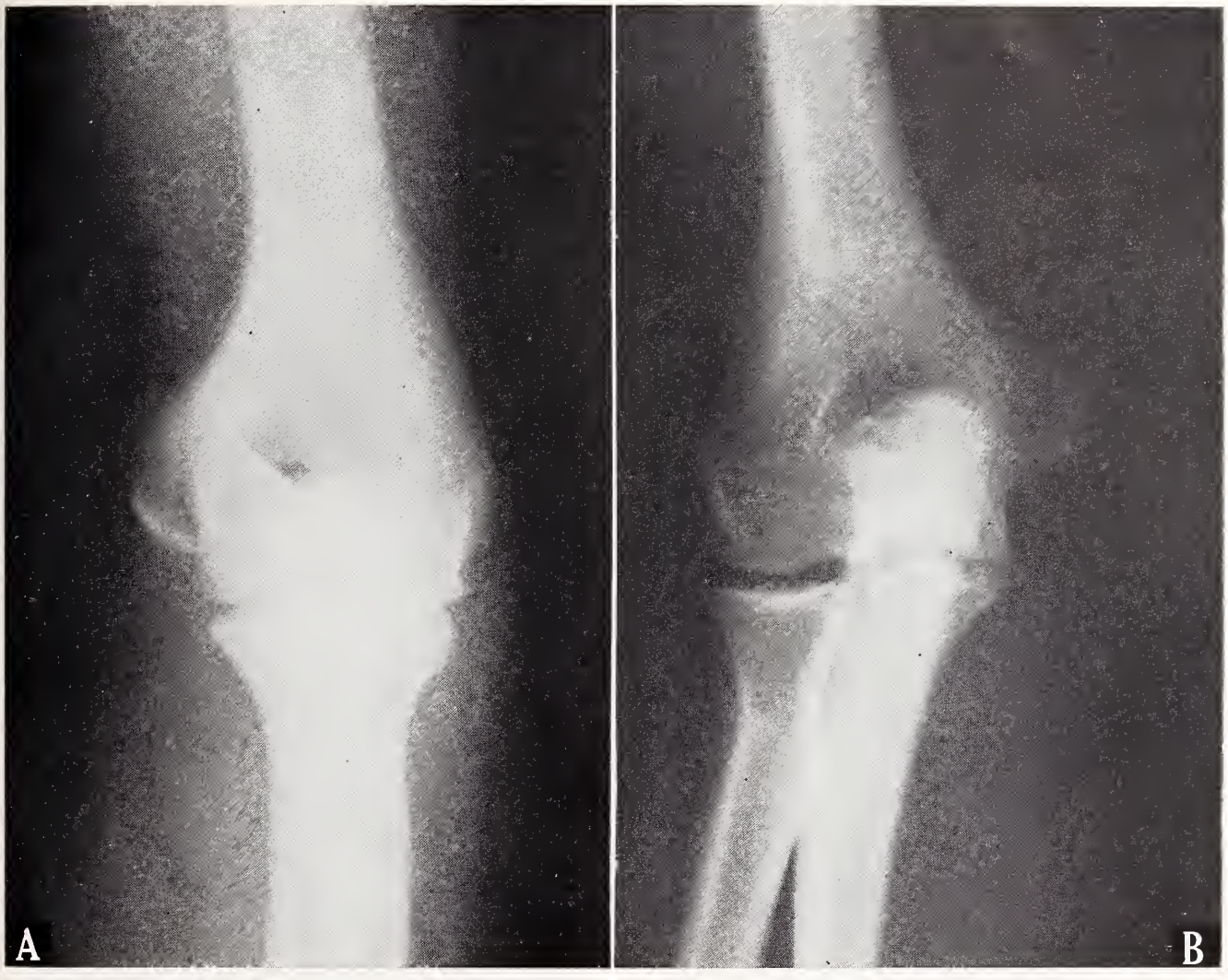


Figure 5. (A) AP view of right humerus showing a fracture of the medial epicondyle, with slight displacement. This might easily be overlooked if comparable views (B) of the opposite elbow were unavailable.

ond most important factor that one must correct in obtaining reduction of a broken bone, in certain instances remodeling will serve to correct the residual angulation. The acceptable amount of angulation varies with the age of the patient, the site of the fracture and the direction of the angulation. In general, the younger the patient and the nearer the fracture is to the end of a long bone, the more angulation one may leave uncorrected, provided that this angulation is in the proper direction. If growth is to remodel it satisfactorily, it must be (1) near a hinge joint, (2) in the direction of the plane of motion of the joint, and (3) situated with its apex toward the flexor surface of the part (Figure 8). As a rule, no more than 20 degrees of angulation should remain in any instance.

2. *Length.* If bone fragments have been displaced by a fracture, the pain produced often causes reflex muscle spasm designed to immobilize the part. An overriding of the bone ends occurs, with a resultant shortening. Adequate length must be restored. Here, again, anatomic reduction is not always required. Not only may some overriding be acceptable, but it is actually desirable in some locations. If a fracture of a long-bone shaft is displaced, the blood supply to the involved extremity is increased, and this stimulates the epiphyseal plates so that they grow faster than those of the uninjured side. Thus, if the bone fragments are brought back to an end-to-end position, the broken limb will eventually be longer than the unaffected one. This overgrowth averages about 1 cm. after a fracture of the femoral shaft in a child under age 10. In such a fracture, it would therefore be advisable to leave 1 cm. of overriding (Figure 9). A side-to-side union will form, and this will be just as strong as an end-to-end union. It is much better to have overriding than to go to the other extreme and distract the fragments. Distraction predisposes to delayed union or non-union.

3. *Apposition.* This is the amount of contact of one fragment with the other. It can be end-to-end or side-to-side contact (bayonet apposition) (Figure 7B). Apposition is the least important of the requisites for adequate reduction, unless the fracture involves an articular surface. Loss of end-to-end apposition will correct itself by molding as

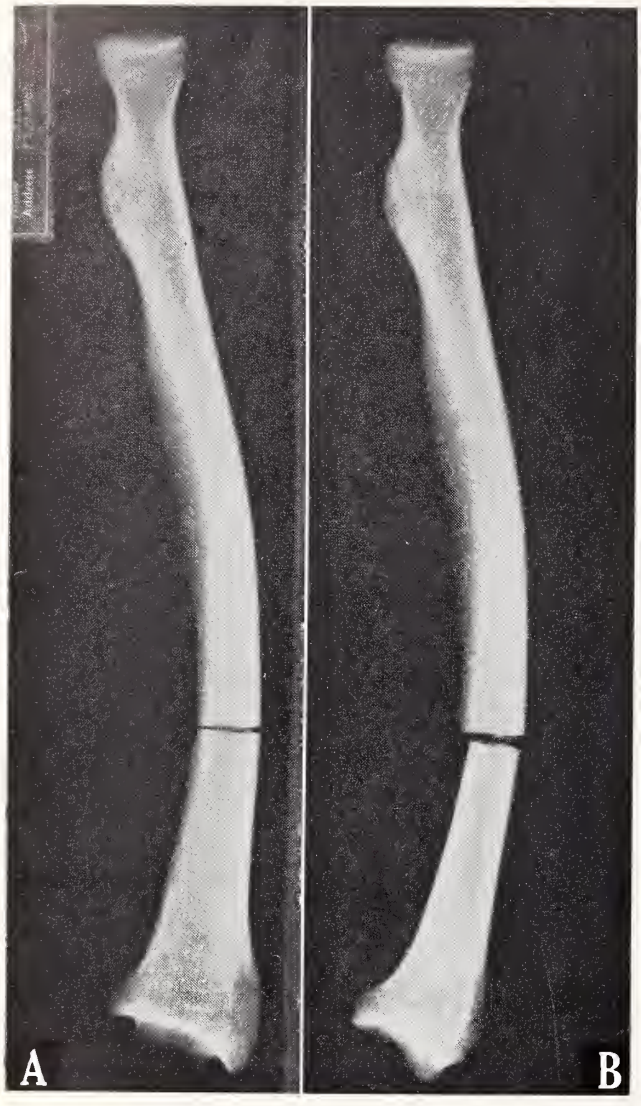


Figure 6. (A) AP view of radius showing that with perfect rotatory alignment, the width of the bone, that of the cortex and that of the medullary canal proximal to the fracture site are the same as the widths distal to the fracture site. (B) AP view of the radius showing that with no loss of apposition and no angulation, but with malrotation of the distal fragment, the widths of the bone, cortex and medullary canal immediately distal to the fracture site are less than comparable measurements immediately proximal to the fracture. These measurements serve as a method for determining rotatory malposition roentgenographically.

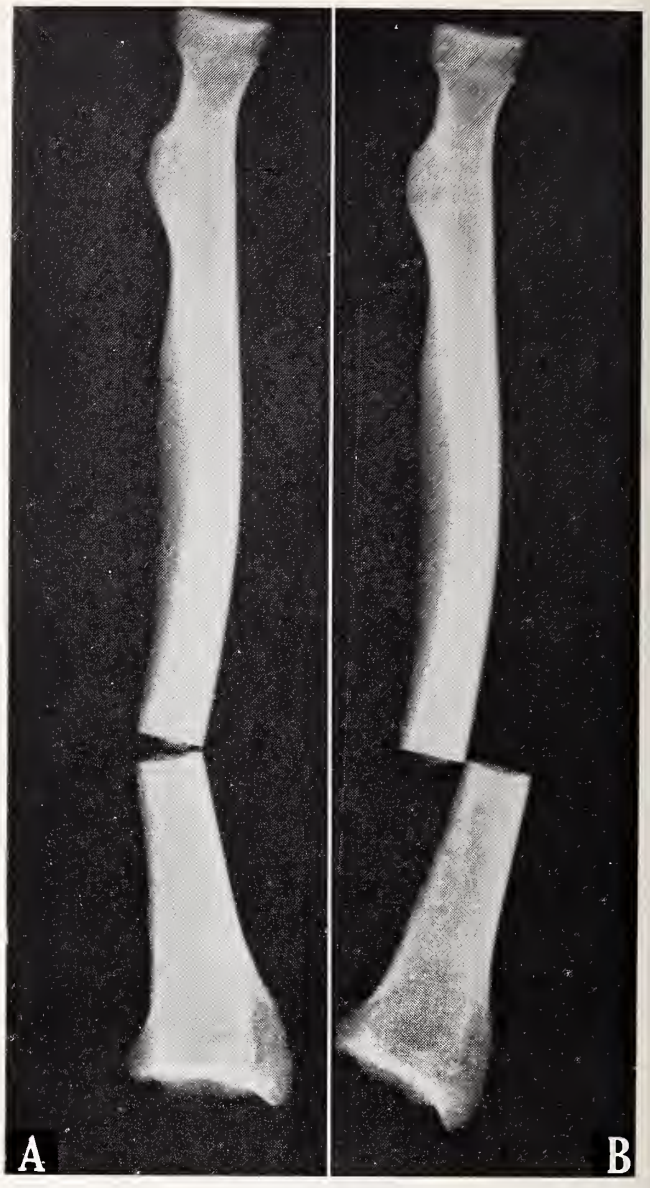


Figure 7. (A) AP of the radius to demonstrate angulatory malalignment. (B) AP of the radius to demonstrate loss of end-to-end apposition.

growth occurs (Figures 8B and 9B). In many instances, bayonet apposition is perfectly acceptable, if alignment and length have been restored.

The above comments on reduction assume that the patient is under 10 (female) or under 12 (male) years of age.

As a general rule, the simplest method of obtaining an adequate reduction is the best. Many fractures lend themselves well to manipulative reduction and casting. If this can be accomplished, it is the best treatment yet devised. Fractures which don't lend themselves to this method can be treated in traction, with or without the subsequent application of a cast. These two methods can be used in nearly all children's fractures, even the ones near joints which, in adults, might require more aggressive forms of treatment. Not only will manipulation or traction accomplish the desired position, but with few exceptions, they are the only forms of therapy that should be used.

There are some rare articular and epiphyseal injuries and three rather common fractures about the elbow which must sometimes be openly reduced. These include (1) the lateral condyle of the humerus, which requires open reduction in nearly all instances; (2) the medial epicondyle of the humerus, which must be openly reduced if there is marked displacement, entrapment of the fragment in the joint or ulnar-nerve compression; and (3) a radial-neck fracture with a severe unreducible angulation. It must be emphasized that it is just as necessary to do open reduction of these fractures as it is to avoid open reduction in

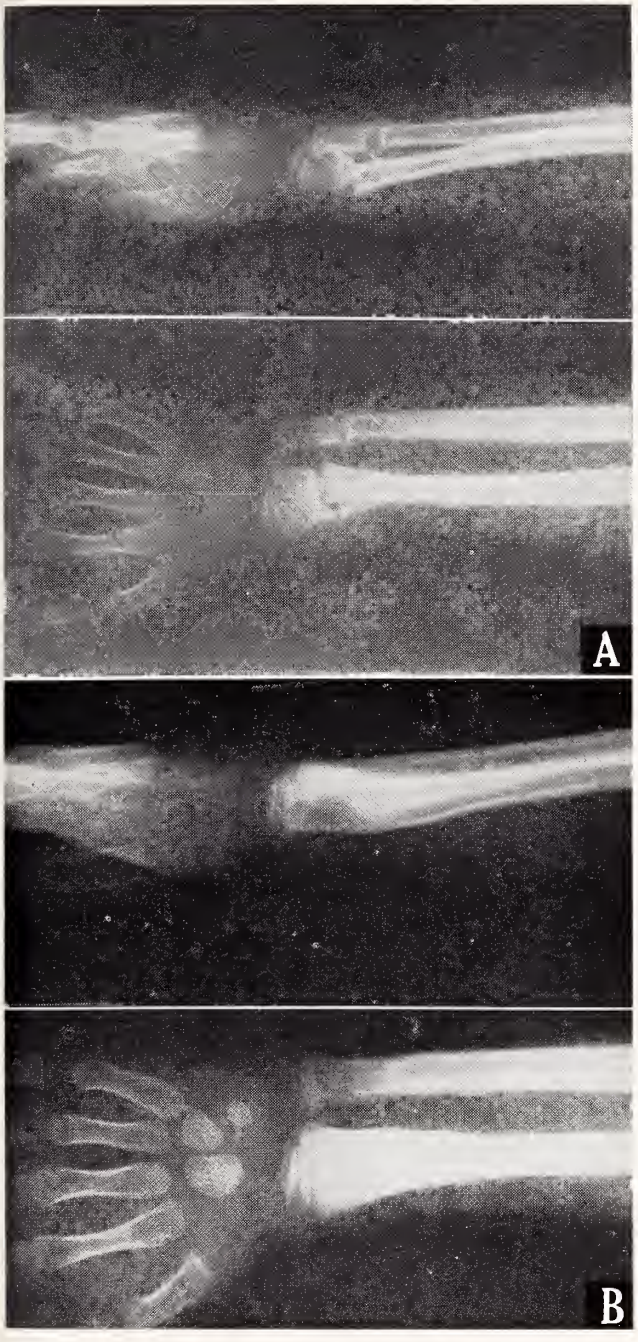


Figure 8. (A) Lateral and AP views of a forearm, four weeks after fracture of the radius and ulna, in which the radius has been allowed to remain angulated, as demonstrated on the lateral view. On the AP view, it can be noted that there is also some loss of end-to-end apposition. (B) Comparable views three months later, showing that the angulation is being corrected. One can anticipate that this will be corrected completely within the next few months. Such a result could be expected in a patient four years old, with a fracture near the end of a long bone, with the angulation in the plane of greatest motion of the adjacent joint, and with the apex of the angulation toward the flexor surface of the part. The AP view demonstrates that the loss of apposition has corrected with remolding.

most other fractures in children. Operative interference, in other instances, must be classified as a mischievous assault that can lead to limitation of

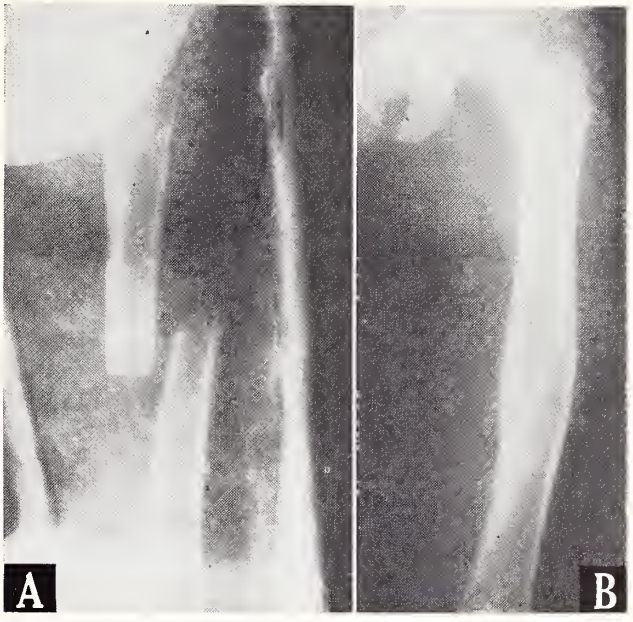


Figure 9. (A) Fracture of the femur in a child being treated in a hip spica. There is good alignment (no angulation and no rotation), but complete loss of end-to-end apposition. (B) A comparable view one year later, showing that this loss of end-to-end apposition has corrected, and that the fracture has united well. One can expect that the leg lengths in this case will be equal.

joint motion, delayed union, non-union, osteomyelitis, septicemia and even death.

Because children devise ingenious methods of destroying immobilizing devices, the cast must be applied very securely. As a general rule, one or more joints on either side of the fracture should be immobilized. Follow-up radiographs should be obtained at about five and 10 days following reduction. It is during this time when the reactive swelling is subsiding that the cast is likely to become loose and the reduction may be lost, but this is also the period during which lost position is easiest to correct.

When the fracture has healed to the point where immobilization can be discontinued, one usually doesn't have to worry about residual joint-stiffness and restoration of function. Children do an amazing job of active physical therapy, if left to their own devices, with discomfort as a limitation upon their activity. If there is a question as to possible growth disturbance, the patient must be followed periodically until his growth has been completed, so that disturbances can be detected early and dealt with properly.

The potential for healing, in a child, is amazing. Non-union in a closed fracture is practically unknown, except in instances where the fracture has been molested by an overzealous physician who is the proud owner of a new Bard Parker. The leading cause of complications is mismanagement. This is nearly always the result of poorly-indicated overtreatment.

The gamut of results in the treatment of fractures in children ranges from the height of success

to the abyss of failure, depending upon the application or neglect of fundamental principles.

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The Tired Mother

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FATIGUE IS ONE of the more common presenting symptoms in the physician's office. It may be the result of organic disease, and if so, its cause may be anything within the entire field of medicine. However, I want to emphasize the possibility that it may reflect psychiatric illness or the stresses of everyday living.

A tired mother presents her own particular problems in diagnosis and treatment. Although organic disease must always be considered, it is well to recall that in the presence of serious organic illness, fatigue is seldom a primary complaint. Eighty per cent of cases presenting with fatigue are *not* organic.[1]

DEPRESSION

Fatigue may be present in almost any type of mental illness, but there is one particular type to be alert for, and that is the severe depression. It often presents as fatigue. The patient may look physically ill, but the physical examination is negative. There may be a pronounced loss of weight, the patient looks depressed, she is tearful, and she expresses self-depreciatory ideas. She describes trouble in getting to sleep, and particularly in awakening too early in the morning. Her fatigue has a peculiar pattern. It is most pronounced early in the morning, but tends to improve as the day goes on, so that by evening she may feel much better. This is the opposite of the usual pattern, in which fatigue increases as the day progresses. If this constellation of symptoms exists, the patient needs help immediately, and she is a potential suicide. Some of these patients can be treated in the office by means of anti-depressant medications, but others should be treated in a hospital situation, depending upon the depth of depression and upon the risk of suicide.

Dr. Norris is an associate professor of psychiatry at the University of Oregon Medical School, and he made this presentation at the Annual Refresher Course for General Practitioners, in Iowa City, on February 21, 1964, when he held a comparable post at the SUI College of Medicine.

MORE COMMON CAUSES OF FATIGUE

Fatigue is usually the result of less serious conditions, ranging from simple overwork to actual neurosis.

Physical Fatigue. If the mother is 28 years old and has five children under six years of age at home, if she is up three or four times a night, if one or more of her children have been ill lately, and if she has to do the ironing, washing and cooking, and is, in fact, working 16 or 18 hours a day, she is probably exhausted from lack of rest and of sleep. One need look no further. This is the woman who anticipates childbirth because it is her only opportunity for rest and relaxation. She responds rapidly to rest in a hospital or to a vacation (away from her children, not on a family camping trip). This response to rest, of course, will be temporary if nothing is done to correct her situation at home. The remedy may consist of having someone come in to help her with cleaning and ironing, and of helping her reorganize her life so that she can get more sleep and get some time to herself. One can enlist the aid of her husband, and point out to him the necessity of his helping her in ways that he has not helped before. The physician can direct her activities, and point out to her and to her husband that she needs a better organized and less fatiguing life. Certainly this is a better solution than to keep her going on 15 mg. of Benzedrine a day.

The Over-Conscientious Mother. Some women, as a consequence of their personality type, make themselves physically fatigued. A woman may always have been effective and happy, even though she has always had to keep her house meticulously clean and spotless, and has had to do everything with a perfection that few people ask of themselves. However when a pregnancy comes along—it may be the first one, or the third or fourth—this meticulousness may become absolutely impossible.

She works harder and longer to maintain her old standards, and becomes increasingly tired, frustrated and angry. The problem is not so much

in her difficult situation as in her inability to adapt to it. Here, the physician must point out the unrealistic demands she is making of herself, and the price that she and her family are paying for them. A continued pattern of this sort can lead to a great deal of unhappiness, and even to serious marital discord. The physician can use his authority to reassure her and to relieve the guilt that she may have about not being the perfect wife, mother and housekeeper.

The "Lazy Husband Syndrome." This is probably the commonest problem of all. The picture is one of a husband who has had a "long" eight-hour day at his air-conditioned office and who comes home, calls for a drink, plops exhausted into a chair with the newspaper or in front of the television set, gets up to eat his dinner an hour later, complains that the meat is not well done, pecks his wife on the cheek and goes out with the bowling team, has a beer, comes home, watches some more television, and plops into bed. Meanwhile, his wife—who has also been working all day—gets the meal, tries to discipline the children "so Daddy can rest," feeds the infant, serves the meal, gets up after dinner and does the dishes, feeds the dog, bathes the kids and puts them to bed, puts a load of washing through, does some ironing, watches TV for an hour (while darning socks), and plops into bed. This routine goes on day after day.

The husband remembers their anniversary, he takes his wife out once a month to the movies, he occasionally complains of food bills, he never surprises her with small or thoughtful gifts, he ceases to court her or tell her that he loves her. He certainly never helps her with her "woman's jobs," including the care of their children.

Now, what I have described is quite common in American marriage. The husband is happy, and he thinks he has a happy home. It is—for him. However, he has learned to take things for granted. Because he loves his wife, he doesn't need to tell her so. He has satisfaction in his work, and he is simply unaware that his wife finds little satisfaction in hers. She continues to require support and appreciation for what she does, and since she gets little thanks from her children, her husband is the only other possible source. The question isn't one of loss of love or a bad marriage; it is simply a loss of awareness of what the wife's needs may be.

In this situation, women become vaguely unhappy, tense and fatigued. An aggressive woman will let her husband know that she doesn't like things the way they are, and he will usually respond as she wants him to. If not, the marriage breaks up. Occasionally a third party may enter the scene to provide the romance and appreciation that has been lacking. Most often, however, such a wife appears in the doctor's office saying she is tired and doesn't know why.

She is a very sweet and overwhelmed person, and calls upon the doctor's sympathies. She doesn't realize that she is unhappy in her marriage, or if she does, she hasn't connected that unhappiness with her fatigue. It will not take much questioning to establish that connection. Inside, she has all the feelings the rest of us have, and she is angry about her husband's failure to help her, she is angry about her husband's taking her for granted, and she becomes angry at her children—although she'd never admit it, for mothers are supposed to love their children—and she feels angry about being trapped in this situation.

Such a woman doesn't need vitamin B_{12}. She needs help in ventilating her feelings and in bringing her situation out into the open. Her husband is unaware of what he has been doing—or what he has not been doing—and his attention needs rudely to be drawn to what has been happening. This will require varying degrees of counseling and advice, most of which I think can be handled in the office. Some such patients will require the attention of a psychiatrist.

Incidentally, there is a sub-type of this condition which I have seen often enough to have given it a name. It is the "physician syndrome." This is a disease that had its onset while the patient's husband was in medical school, it was aggravated by internship, and became chronic when he started private practice. The physician is particularly vulnerable because he was worked hard, is not lazy and all day long has been "giving" to his patients. So, it is understandable that he should come home expecting to have his virtue rewarded, in some degree, by his wife and family. Yet, all his good acts on behalf of his patients (which, he must admit, give him considerable satisfaction) haven't benefited his wife one bit! She, as much as any other woman, needs some of the care and concern that her husband so lavishly hands out all day to his patients.

Boredom. With increasing frequency, we see the tired patient who is bored. Typically, she is middle-class and well educated, her home is well organized, and she has enough help with her home and children. She gets plenty of recreation and her husband is good to her, but she is tired. She has been trained for intellectual accomplishments, and a home and bridge parties simply do not offer her much challenge. It will do little good to explain to her how lucky she is and how content she should be with her lot. She does need encouragement and guidance in pursuing activities that are more difficult and thus more meaningful to her—a college course, precinct work in politics, or a part-time job that would use some of her capacities.

Marital Discord. When there is open conflict in a marriage, and when the relationship has become a battlefield for the expression of neurotic personality traits with ensuing bitterness, hostility and emotional turmoil, it is not surprising that the woman may develop various psychosomatic complaints, including fatigue. The tired woman may be wondering whether her husband is stepping out

on her, or she may be in the throes of deciding whether to maintain or break up her marriage. She is unlikely to connect her fatigue with her emotional stress, and thyroid is unlikely to help her marriage. She is in an acute emotional crisis which can change the course of her life, and she needs definitive help urgently.

Neurosis. Finally, we arrive at the other end of the scale, where external factors play little or no role. The patient has been tired for years, and has had various somatic symptoms—aches, pains, tingling, dizziness and insomnia. She may have only one child at home, and a husband who is very helpful to her—a husband who, in fact, is doing the ironing and the dishes, and is getting up with the youngster. One can anticipate that this woman has deep internalized conflicts, and that she is not going to benefit from having two or three days' rest in the hospital. She is the kind who is most likely to be given various types of medication. Although she complains of her responsibilities towards her family, her problems go much deeper. Manipulation of the environment does not help. In fact, it may even make things worse, since the patient often *needs* some sort of stressful situation to blame her difficulties upon. Once they have been corrected, she finds it difficult to continue being a martyr, and so she may feel worse. She will have the same response to rest. She will probably require intensive psychotherapy.

INTERVIEWING THE TIRED MOTHER

After completing the medical examination and assuming that no organic illness is present, it is important for the physician to get information with which to evaluate the situation. A few brief questions will be sufficient to give him a pretty rapid insight into what is going on. How many children does she have? How much illness have they had? Just how much time does she spend working at home? How much sleep does she get? How much does her husband help her? How affectionate is he? How often do they go out? What kind of vacations do they have? When was the last time she was away from the children? How are she and her husband getting along? Is sex as enjoyable as it used to be? Does she have a long history of various ills, including fatigue, even pre-dating the marriage? Has she been on the merry-go-round with other physicians as regards treatment? These questions will provide useful leads for further investigation.

USE OF MEDICATION

When organic illness has been eliminated, I can see little to be gained by disguising fatigue under such names as anemia, low blood pressure or vitamin deficiency, and treating it with iron, thyroid, vitamin B_{12} or hormones. To do so may make the problem easier to handle initially, for the physician feels more comfortable in having placed a label on it, and he thus has avoided a lengthy and difficult explanation to the patient. The patient feels happy because her condition has been given a respectable name. However, when she is treated with a medication which is essentially a placebo, the real problems are not likely to be touched upon or taken care of, and any improvement in her condition will be temporary. The relapse which is to come may be handled by the addition of a mild tranquilizer or a stimulant. This will work for a short time, but other medications will have to be added, from time to time, and it isn't likely that medication will be discontinued. The patient ends up taking various kinds of pills all day, and becomes convinced—with her physician's help—that she really has a chronic, organic, incurable ailment. Consequently, the doctor has a lifetime patient.

However there are situations where medications can be utilized, and very effectively. They should be as mild as possible, and a minimal amount should be used. Women with symptoms of depression that are capable of treatment in the office should receive an antidepressant such as Elavil or Tofranil. Where there is anxiety and tension, a trial of phenobarbital is indicated. In this type of case, tranquilizers are definitely overused, and are generally less effective than barbiturates. Medication is most effective when an acute, self-limiting situation or crisis has arisen, and when the drug is used to carry the patient through a temporary period until the environmental situation has resolved spontaneously or with the physician's help. It is important for the doctor to follow the patient for a period of time to see what kind of results the medication is achieving. A temporary response to medication can be deceptive, for it may merely cover up the problem.

SUMMARY

As in any other area of medicine, effective treatment of the tired mother is based upon diagnosis and understanding. I don't mean that a psychiatric label must be assigned to it, but the physician must gain a dynamic insight into what is going on in the patient's life situation.

Although physical tiredness is a factor, it isn't usually the most significant one. Emotional stress is almost always present. For example, fatigue in a mother is not usually related to the number of children she has.[2] A mother with one child may be more tired than another with five. When the husband is understanding and aware of his wife, and when he supports her both emotionally and physically, she is very unlikely to appear in a doctor's office complaining of fatigue. She gets tired, of course, but she recovers with a good night's sleep, and her husband makes sure she gets it.

When the tired woman has no organic disease, you will often find something amiss in her family structure. A mother gets tired in the context of her family, and the cause and cure usually lie within this family situation. More often than not, the solution involves the husband. It is up to the physician to evaluate the situation, prescribe treat-

ment, and lend his support to the treatment. One can recommend a vacation or rest in the hospital for one patient; another will require help in organizing her life, and insistence that her husband share the responsibility for her getting well. Another requires advice on child-rearing; another on contraception.

When the environment is responsible and the environment can be manipulated (this usually requires cooperation from the husband), there should be a response within a short time. This is true of most of the cases we are talking about. If such measures are ineffective, a reevaluation of the situation is necessary. One must then strongly suspect the existence of a neurotic process in the patient which may require more intensive psychotherapy.

Fatigue is often the first symptom of psychological trouble—internally or in the marriage. Wise counsel (synonymous, in this case, with good medicine) can change the course of the patient's life. Without it, the physician will make his patient into a lifetime hypochondriac, not a satisfying way to build up a practice.

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Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A THREE-MONTH-OLD WHITE FEMALE was admitted to the University Hospitals because of failure to thrive. Her family history revealed that she was the youngest of five children and had been born seven years after her next older sibling. Her father and mother were 45 and 42 years of age, respectively. The pregnancy had been uncomplicated, although her mother had gained 30 pounds during pregnancy. Otherwise, the family history was completely negative. The patient had been born by breech delivery after a normal gestation of 39 weeks. Her birth weight had been 2,025 Gm. She had had some respiratory difficulties immediately after birth, but her breathing had improved after she was placed in an incubator and was given oxygen therapy for four days. The child was an extremely poor eater, and had to be fed at frequent intervals. Her daily intake was rarely more than 8-12 oz. of milk per day. No history of diarrhea or vomiting was obtained.

Physical examination at the age of three months revealed an emaciated infant with a body weight of 2,500 Gm., a body length of 58 cm., and a head circumference of 35 cm. The child did not follow light, did not grasp, and did not raise her head from a prone position. Her cry was very weak. She lay almost motionless. She frequently assumed an opisthotonos position. She had a protruding occiput, a sunken anterior fontanel, deep-seated and poorly differentiated ears, and a small, receding mandible. A metopic suture was present. The pupils reacted to light. The eye grounds were found to be normal. Otoscopy revealed no abnormality. She had a high-arched palate and slightly enlarged alveolar processes. Her chest was symmetrical, with a circumference of 29 cm. and a rather short sternum. There was a loud systolic murmur in the second and third left interspaces. The second pulmonary sound was accentuated. The liver reached 4 cm. below the costal margin. The abdominal walls were extremely thin, and peristalsis could be observed. A small umbilical hernia was present. The extremities were slender, with poorly developed, somewhat hypertonic musculature. The abduction of the thighs was limited, and a bilateral click (Ortolani's sign) was heard. The tendon reflexes were present and not exaggerated. The withdrawal reflex and the Moro reflex were sluggish. Babinski and Rossolimo reflexes were positive. The urine was negative to chemical and microscopic examination. The hemoglobin level was 13.6 Gm./100 ml., and the white blood cell count was 9,100/cu. mm. The peripheral blood smear showed 45 segmental leukocytes, 48 lymphocytes and 7 monocytes.

An electrocardiogram suggested right ventricular hypertrophy. A chest roentgenogram was interpreted as showing dextrocardia, with the heart size at the upper limits of normal. The pulmonary vasculature was prominent on the left and compatible with a left-to-right shunt. A roentgen of the abdomen was interpreted as normal, except for congenital dislocation of the left hip. A roentgen of the skull showed the facial bones to be small in relation to the calvarium. Serum creatinine was 1.2 and blood urea nitrogen 29 mg. per cent.

The child continued to do poorly in the hospital, and died six days after admission.

CLINICAL DISCUSSION

Dr. Hans Zellweger, Pediatrics: Miss Maly will discuss the protocol for the students.

Miss J. Maly, junior ward clerk: The infant's birth weight had been 2,025 Gm., placing her in the premature category. Perhaps her failure to thrive had been a problem even before birth. The child was an extremely poor eater following birth, and she had gained only 475 Gm. The rule of thumb for predicting weight gain is one ounce per day for the first three months, and it suggests that a gain of around 2,700 Gm. would have been desirable. Inabilities to follow light, to grasp and to raise the head all indicate cerebral involvement. The positive Rossolimo reflex, the muscular hypertonia and the opisthotonos position support the theory of cerebral damage. Another thought regarding the opisthotonos position is that the mechanical arrangement of the upper respiratory tract, in the face, especially the small, receding mandible, may have made this position a desirable one for the maintenance of an open airway. The positive Babinski in a child of this age is not significant.

Head and chest circumferences at this age are usually approximately equal. The infant had a discrepancy here, the chest being smaller than the head. The head circumference wasn't inconsistent with the body length, indicating that the chest was abnormally small. However, the head occupies a larger proportion of the body in the premature, and such a discrepancy here may not have been significant.

A systolic murmur, in the second and third left interspaces, and an accentuated pulmonary sound on physical exam suggest a cardiac defect. The electrocardiogram suggested right ventricular hypertrophy, and the chest film was interpreted as showing dextrocardia, with increased pulmonary vasculature on the left. These findings are compatible with a left-to-right shunt. We feel that the pulmonary vasculature was probably also increased on the right, and that perhaps it was hidden from view by an enlarged right ventricle, as indicated on the electrocardiogram.

The physical findings were typical of left-to-right shunt and raise the question of whether dextrocardia was truly present, or whether ventricular hypertrophy made x-ray interpretation difficult. These cardiac defects, along with the protruding occiput, the high-arched palate, the umbilical hernia, the hip dislocation, the low-set and poorly differentiated ears, the short sternum and the small facial bones merely exemplify the many congenital anomalies in this child. Although we made no attempt to classify these into a specific syndrome, this case is not inconsistent with those reported as representative of either Trisomy 13-15 or Trisomy 16-18, and especially the latter.

We offer the following as possible contributing factors to the child's failure to thrive:

1. *Inadequate nutritional intake.* We know her nutritional intake at birth was from 8-12 oz. of milk per day. Calculating 120 calories per kilogram and 20 calories per ounce, 12 oz. per day is not an improper intake for a 2 Kg. infant. However, we do not know her intake at three months of age. It has been reported that infants with Trisomy 18 fail to thrive on 150 calories per kilogram, so we postulate a congenital defect at the molecular level as regards utilization of food versus actual oral intake.

2. *Congenital malformations are often predisposing factors to disease.* They represent points of inadequate resistance. They can be damaged by minor infections, toxins or trauma that are usually tolerated in a normal organism. Although the patient's admission blood count doesn't indicate systemic infection, we cannot rule this out as a part of her subsequent hospital course.

3. *Kidney malformations are often associated with other congenital defects, especially with low-set and poorly differentiated ears.* Renal involvement was mild in this case, as indicated by a normal urinalysis and only slightly elevated BUN and creatinine determinations. But we suspect renal involvement, perhaps unilateral hypoplasia.

4. *A depressed anterior fontanel suggests dehydration.* However we have no knowledge of vomiting or diarrhea, or any indication of fever that would account for an abnormal fluid loss. Knowledge of vital signs, including respiration, would be helpful here.

5. *Congenital heart defects have long been associated with failure to thrive.* Increased pulmonary vasculature and a liver palpable 4 cm. below the right costal margin suggest congestive failure in this case.

We suggest the following as the most probable causes for death: (1) aspiration, (2) infection, and (3) congestive failure. Although we do not know the details of the infant's hospital course, we suspect she died of aspiration pneumonia.

Dr. Zellweger: Thank you. Are there any questions you would like to ask Miss Maly? If not, I ask Dr. Gauchat to carry on the discussion.

Dr. Robert Gauchat, Pediatrics: I should like to congratulate Miss Maly on her excellent analysis of the protocol.

I shall consider the broad topic of "growth failure," or "failure to thrive," as exemplified by the case we are discussing today. In doing so, I am actually focusing upon the "cornerstone" of pediatrics—the reason for existence of the whole specialty of pediatrics in the medical edifice. It seems to underlie all of the research and all of the other service activities that are the responsibility of pediatricians everywhere. One can approach "failure to thrive" as a problem in nutrition, in genetics, in endocrinology, in neurology, in cardiology, in infectious diseases, and in immunology or public health. Any aspect of these specialties may underlie a failure to thrive in childhood.

The pediatrician's responsibilities in this broad

area are summarized in the motto of the Academy of Pediatrics, which is simply: "For the welfare of children." During the past several years, we have been glad to see an increase of interest in growth and development among our colleagues in other specialties. It is now recognized and accepted that so-called norms of growth and development can be extended beyond adolescence and into adult life, in terms of height and weight tables and standards of intellectual performance. Indeed such standards are being developed even for the geriatric age group at the present time. This interest of the entire medical community in growth and development, in its broadest, life-spanning sense, emphasizes what we might call the "fourth dimension in medicine," the concept that time is a vital factor in the evolution of the human organism, in its response to environmental stimuli or in its varying ability to respond to environmental stimuli.

Traditionally, the pediatrician at least has approached the problems of growth failure in a manner similar to that of the veterinarian or the horticulturist. He considers nutrition, absorption and utilization of nutrients, and considers diseases and other unfavorable factors in the environment, both internal and external, as he tries to explain the patient's failure to progress normally and along the expected channels. However as knowledge increases, the list of potential causes of failure to thrive is ever lengthening, and thus it becomes more and more difficult for the physician to keep all of the possibilities clearly in mind.

For this reason, I have arranged nearly all of the broad categories of causes which need to be considered in each case of this sort—and which we shall need to consider regarding the infant who has been proposed for discussion today—in an acrostic pattern. You will note that the initial letters of the words in the list spell the words "GROWTH FAILURE." I hope this mnemonic device may be helpful to some of you, and not too repellent to the more sophisticated members of the group:

Genetics
Racial factors
Organogenesis
Wakefulness (Hypo- and Hyper-)
Tumors
Hormonal factors

Feeding
Absorption
Inflammation
Liver
Urinary tract
Reticuloendothelial system

Environmental factors: Emotional factors
Etmosphere
Etc.
Endo- } toxins
Exo- }

Genetics. One would certainly consider the possibility that growth failure might have been caused by chromosomal anomalies such as are now known to occur and to underlie mongolism and various other trisomies like those which Miss Maly mentioned—deletions and reduplications of sex chromosomes, and perhaps other abnormalities yet to be discovered. Under the broad topic of genetics, one should also recall the autosomal-recessive genes which, in their homozygous state, permit abnormalities of human enzymatic function to occur—usually absences of essential enzymes resulting in such enzymatic deficiencies as those which lead to the adrenogenital syndromes. And perhaps one should also include a few abnormal autosomal-dominant genes which cause dysfunctions of growth of the human organism, such as those of achondroplasia and osteogenesis imperfecta.

Racial factors. I think these are self-evident, but too often we confuse hereditary and racial factors. By racial factors, we do not refer to the genetic kinds of problems just alluded to, but rather to the differences among the various human races—their tendencies to be either large or small. At one extreme, perhaps, are the Pygmies, and at the other extreme are the members of different African tribes who reach great heights, and yet reveal no enzymatic or other genetic abnormalities or differences from other races.

Organogenesis was the best word to use where an "O" was required in my table. I use it to refer to fetal development in its broadest sense, and to the errors in development which may occur in various vital organs of the body at that time, and particularly during the first trimester of pregnancy. Included under this broad category should be the congenital cardiac abnormalities and the many renal anomalies that may contribute to a failure of the organism to thrive beyond birth, the neurologic abnormalities such as hydrocephalus, myelomeningocele, and so on. The list is interminable, and all of us recognize many of these organomalies readily.

Wakefulness is an interesting concept, and one which is too often overlooked. The infant or child who is sleepy will not thrive, despite the heroic efforts of his parents or of the others who are responsible for his care and nurture. Inactivity in bed, in the sense of hypo-activity, often causes weight loss, failure to lengthen, and failure to mature as regards social and intellectual functions, for both the body and the mind require movement and exercise if they are to grow and develop normally. Similarly, the hyperactive child, the child who is virtually climbing the walls, may fail to thrive for several reasons. Perhaps there may be insufficient time for him to eat. He just doesn't take enough interest in food, and is interested so briefly that he takes less than an appropriate amount of food. Or, alternatively, he may be so hyperactive that he burns more calories than are supplied by an average diet.

Tumors may interfere with normal growth and development in several ways. They can compete for nutritional supplies, they can obstruct the function of vital organs, they may replace vital organs, or they may cause necrosis in them through the release of toxins and the extension of secondary infections.

Hormonal factors which affect growth are well-known to all of you. We should pay particular attention to the products of the anterior pituitary, the thyroid and parathyroid glands, the adrenal glands, the pancreas, and the sex glands, as regards their influence on the growth process throughout childhood, during adolescence and beyond into adult life.

Feeding was the original interest of pediatricians. Pediatrics began when physicians became concerned with the problem of how and what to feed the baby who couldn't adequately be nourished at the breast of his mother. An ability to calculate and apply complex formulas separated the early pediatricians from their less mathematically inclined professional colleagues. This problem has now become simpler, less compulsive, for pediatricians and the others caring for children, but as a basic part of our investigation of the child who is failing to thrive, the question of what the child is being fed must be paid careful attention. He may be getting too much or too little, as regards total intake of food per day. Too much food, for the premature infant, may lead to an overexpansion and overtaxing of the ability of his intestinal tract to digest and absorb food properly, thus leading to diarrhea and weight loss.

The baby being discussed today did not receive too much food, but it wouldn't have been surprising if she had failed to thrive despite aggressive tube-feeding of rather large daily caloric intakes. If that had been done, the protocol probably would have reported large, loose, frequent stools, representing a fecal loss of nutrients because the intestinal tract had been unable to handle the work-load imposed upon it.

Inadequate intake is a more common problem. It is exemplified by the breast-fed infant whose mother is trying to feed beyond her natural capabilities, by the infant who receives an incorrectly-prepared formula, and by the infant who simply is offered less than an appropriate amount of food. Specific deficiencies of essential nutritional elements such as protein, amino acids, vitamins and minerals may also lead to the failure of one or more systems of the body to function normally.

If one assumes that the child is given an adequate diet and receives it into the alimentary tract by mouth or by any other route, *absorption* is the next requirement. Food which is not absorbed has no "nutritional value" for the body. An obstruction of the lumen of the bowel, such as occurs in pyloric stenosis, may cause an abnormal loss of nutrients, plus body fluids. Lesions of the small bowel, such as are present in celiac disease, may prevent normal absorption of fat, carbohydrate and protein at this intestinal level. Lesions of the lower bowel, exemplified by ulcerative colitis, may prevent normal reabsorption of water, and can lead to abnormal losses of water and protein into the stool. When essential digestive enzymes are absent, such as those from the liver or pancreas, the normal breakdown and digestion of food is likewise prevented, leading to malabsorptive problems.

Inflammation also represents a very broad category of causes of growth failure. Think not only of infection, but also of allergic disorders that produce inflammatory reactions and the auto-immune diseases, with their characteristic inflammatory reactions, as part of this category. All of these may place the body in a continuing stressful state —with a negative nitrogen balance—preventing normal anabolic progress.

Because the *liver* and *urinary tract* play such vital roles in the maintenance of nutritional and general homeostatic balance of the body, it has seemed appropriate to assign them the "L" and "U" places in the "Growth Failure" table. The multiple metabolic responsibilities of the liver should again be emphasized. As Miss Maly has noted, the infant under discussion today had a large liver—perhaps not a malfunctioning liver, but one could ask whether some of the infant's problems regarding growth may not have been due to the failure of her liver to carry out normal metabolic and excretory functions, including synthesis of protein, coupling and degradation of many waste products of metabolism and of drugs, and their normal excretion through the stool. Likewise, malfunction of the urinary tract may have been responsible for this baby's failure to thrive, as it is in so many children who do poorly—failure of the urinary tract's normal functions of conservation of water and electrolytes, or of excretion of the nitrogenous waste products, drugs and other toxins, salts and minerals no longer needed by the body. Not only must these renal functions be present if the organism is to thrive, but they must be in balance and must complement one another.

Reticuloendothelial system was the only "R" I could find for my mnemonic device, but I think it is appropriate to include it, for this diffuse and poorly-understood system influences the response of the body to infection, plays a supportive role in many organs and systems, and occasionally undergoes abnormal alterations which we group together as the reticuloendothelioses.

Among *"environmental factors,"* both endotoxins and exotoxins obviously can interfere with normal metabolism. Emotional factors are tremendously important, not only among children but also among older people as regards whether or not they achieve normal homeostasis, and do or do not progress along normal developmental channels. The institutionalized child, the unloved child, the unwanted child, despite adequate nutrition,

normal absorption, utilization and excretion, despite normal genetic factors and despite all of the rest, often fails to thrive, and such a child can often be revitalized simply by surrounding him with a friendly, loving environment. *"Etmosphere"* refers to smog, air pollution, lack of sun, and to thermal and other similar factors which can alter or delay normal growth.

Let us look once again at the infant described in the protocol. I agree with Miss Maly that the child may have failed to grow because of deficiencies included in many of these categories. I should propose deficiencies in at least seven of the 13 broad categories as probable causes contributing to the failure of this child to thrive. There undoubtedly were genetic factors. They are strongly suggested by the fact that her parents were beyond 40 years of age at the time when she was conceived. Many chromosomal anomalies are found among the progeny of parents in this older age group. Organogenesis was faulty in this infant. Many congenital anomalies are reported in the protocol. Wakefulness surely was a factor. The infant was dystonic; she was poorly responsive; she did not suck and feed well; she tired easily; she was a difficult infant to feed; and for all of these reasons, her lack of normal wakefulness contributed to her failure to progress properly.

Her feedings were inadequate. Her liver may have been functioning poorly. Her urinary tract may have been dysfunctional, since renal anomalies are often found as a part of the syndrome of Trisomy 18, and she is reported to have had low-set ears. Environmental factors also may have contributed to her failure to thrive. On the basis of her birth weight, she was a premature, and her difficulty with respiration early in life, and her failure to thrive in an environment other than the natural one within the uterus, suggest immaturity. She was probably also an unwanted child. We aren't told whether she ever lived within the family home, but I suspect that her parents had not planned this pregnancy, and surely that this baby, with so many visible anomalies, would not have been a completely welcome addition to the family group. So perhaps neglect, plus the baby's own reactions to a lack of normal maternal stimulation, may have contributed something to her failure to progress normally.

As to the cause of her death, I am as reluctant as Miss Maly to guess, but I agree that congestive cardiac failure and possibly aspiration would be the most likely causes on the basis of the information available.

Dr. Zellweger: Thank you, Dr. Gauchat, for an excellent discussion.

The combination of multiple malformations, and an obvious and severe failure to thrive, can be accounted for by a chromosomal aberration, among other things. It is most likely to have been an aberration of one of the autosomal chromosomes, such as Trisomy D (13-15), Trisomy E (16-18), or Trisomy G (21). Major malformations such as congenital heart defects, atresias or stenoses of the intestinal tract occur in about half of the cases of Trisomy 21. However, more than two major malformations are very rare in any particular individual with Trisomy 21. Mongoloid infants and children are often below the third percentile in height and weight. Failure to thrive, however, to the extent seen in the case under discussion today, is exceptional in mongolism. On the contrary, at a later age many mongols display a tendency toward obesity.

Failure to thrive associated with a diversity of malformations is characteristic of Trisomy 13-15 as well as of Trisomy 16-18. The two conditions cannot always be differentiated on the basis of clinical findings. A few obvious findings are frequent in Trisomy D and are rare in Trisomy E: cleft palate, hare lip and polydactyly. Many other signs and symptoms are common for both conditions.* The birth weight is usually low in both conditions. Life duration is short. Most children afflicted with either condition die before they reach their second birthday.

History and clinical findings are no more than suggestive. The definitive diagnosis has to be made on the basis of the chromosomal analysis. A number of cases with clinical findings identical to those found in Trisomy 18 have been observed without a chromosomal abnormality.

Before I close, I should like to draw your attention to the high age of this infant's mother. It is well known that the usual trisomies—i.e., nondisjunctions, in contrast with translocations—

* Zellweger, H., *et al.:* Autosomal and sex chromosomal aneuploidy; exhibit. J. IOWA M. SOC., 53:735-752, (Nov.) 1963.

TABLE 1

MOST FREQUENT CLINICAL FINDINGS IN TRISOMY 18

	Per Cent
Delayed development	100
Failure to thrive	100
Micrognathia	100
Low-set ears	100
Prominent occiput	75
High palate	88
Short sternum	88
Contracture of fingers	98
Simian line	60
Syndactyly	43
Hallux less than second toe	80
Rockerbottom feet	45
Congenital heart defect (atrial septal defect, ventricular septal defect, patent ductus arteriosus)	90
Diaphragmatic hernia	40
Renal anomalies	68
Single umbilical artery	8 of 11 cases
Intestinal malrotation	4 of 18 cases

become more frequent with increasing maternal age. This probably is due to the duration of the prophase of the first miotic division of the ovogonia, which begins in fetal life and ends only at the time of ovulation. It is believed that the long duration of this modified prophase of the first reduction division (dictyotene) favors the occurrence of nondisjunction.

Some of the most frequent findings in Trisomy 18 are listed in Table 1.

Dr. Behlke, would you be so kind as to present the radiologic findings of Trisomy 18?

Dr. F. M. Behlke, Radiology: The lateral roentgenogram of the skull demonstrates a large occiput, the posterior fossa being elongated and shallow. The mandible is hypoplastic. The chest film, in this infant, was not a true anteroposterior. The child was rotated to the right, and that fact contributed to the distortion of the cardiovascular silhouette. However, we felt there were changes here consistent with a congenital heart lesion, probably a left-to-right shunt, and possibly dextrocardia. Also, we felt there was probably a hip dislocation on the left. At any rate, this patient demonstrated some of the roentgen findings in the Trisomy 18 syndrome, the most frequently reported abnormalities being micrognathia, large occiput with a relatively long posterior fossa, malformations of the heart, abnormalities of the fingers and toes, short sternum and thin ribs. We don't have a roentgenogram of the hands of this individual, but the fingers are usually held in flexion, with frequent overlapping of the second finger on the third. When the fingers are straightened, the second, third and fourth digits are deviated to the ulnar side, creating a wide "V" between the second and third fingers.

Dr. F. W. Stamler, Pathology: At the time of autopsy, the prosector described a very emaciated infant with the external malformations and abnormalities that have been enumerated, and reported that additional ones were revealed at necropsy. These involved the heart and kidneys. There was congenital cardiac malformation, with a defect of the interventricular septum, and malformation of the pulmonic and aortic valves. The septal defect is the most common cardiac anomaly associated with Trisomy 18. About 90 per cent of those with cardiac anomalies have this defect. The two valvular defects mentioned are not very common, but have been described in this situation.

Two of the pulmonic valve cusps were normal in appearance. The third was very poorly formed, and had rolled, nodular edges. The aortic valve was bicuspid, with one relatively normal cusp. The other cusp was quite large and deformed, and it was within it that both coronary artery ostia were located. The heart was moderately enlarged, with hypertrophy involving both ventricles.

There was a fusion deformity of the kidney. It was a horseshoe kidney with fusion of the lower poles, but no other abnormality was present and there was no evidence that renal function had been in any way impaired. This deformity, as far as I know, is one which occurs rather at random. In one series, an incidence of one horseshoe kidney had been reported in every 376 autopsies, and the majority of the cases were not associated with any consistent pattern of anomalies. Horseshoe kidneys are not usually associated with the type of ear deformity seen in this case, although this association has been recognized in more serious forms of renal anomalies. Renal agenesis, either unilateral or bilateral, is very typically associated with ear anomalies of this type.

In addition to the congenital anomalies, there was acute visceral congestion of a generalized nature, with chronic pulmonary congestion and patchy pneumonitis and some patchy atelectasis of the lungs. There was no evidence of aspiration pneumonia or terminal aspiration associated with the death of this child.

I really have very little additional information to offer as to the exact mechanism of death. This was a very ill child, undoubtedly with metabolic disturbances of an undetermined nature, with congenital heart lesions and a fairly extensive degree of chronic pulmonary disease, and certainly very serious dysfunction of the central nervous system. The autopsy findings are not particularly helpful as to the exact mechanism of death. We assume there was a rather sudden congestive cardiac failure, as evidenced by the congested state of the viscera, but beyond this, nothing specific was evident.

It is quite unfortunate that we did not have permission to examine the central nervous system in this case. The central nervous system abnormalities are one of the most constant features of the Trisomy 18 syndrome, but to my knowledge, not many cases have been studied from this aspect, and we don't know whether or not any consistent patterns of abnormal development occur. Microgyria and extensive failure of differentiation of various portions of the cerebral cortex have been described in some cases, but whether any really consistent diagnostic patterns of maldevelopment of the nervous system exist is not known at the present time.

SUMMARY OF NECROPSY FINDINGS

Multiple congenital defects, consistent with the Trisomy 18 syndrome
- A. Congenital cardiac malformation, with interventricular septal defect, and malformation of pulmonic and aortic valves
- B. Horseshoe kidneys
- C. Micrognathia and low-set auricles
- D. Congenital dislocation of left hip
- E. Flexion deformities of fingers
- F. Short sternum

Chronic pulmonary congestion, with patchy pneumonitis

Visceral congestion, generalized.

STUDENTS' DIAGNOSES

Congenital anomalies of the Trisomy 13-15 type or of the Trisomy 16-18 type, with
Possible aspiration-pneumonia infection, or
Congestive heart failure.

DR. GAUCHAT'S DIAGNOSES

Multiple congenital anomalies, with
Possible congestive cardiac failure, or
Aspiration pneumonia.

Coming Meetings

IN STATE

Sept. 13	**IMS Fall Conference of County Medical Society Officers and Other Representatives,** Hotel Savery, Des Moines.
Sept. 13-15	**Iowa Chapter of the American Academy of General Practice,** Hotel Savery, Des Moines.
Sept. 16-17	**Pediatrics,** S.U.I. College of Medicine, Iowa City.
Sept. 19-20	**Radiology,** S.U.I. College of Medicine, Iowa City.
Sept. 23	**Page County Medical Society Fall Program,** Clarinda.

CONTINENTAL U. S.

Aug. 2-6	**National Medical Association,** Statler Hotel, Washington, D. C.
Aug. 3-7	**Pediatrics,** The Stanley Hotel, Estes Park.
Aug. 24-27	**American Academy of Physical Medicine and Rehabilitation,** Statler-Hilton Hotel, Boston.
Aug. 24-27	**American Hospital Association,** Palmer House, Chicago.
Aug. 24-28	**International Conference on Preventive Cardiology,** University of Vermont, Burlington.
Sept. 9-12	**International College of Surgeons (North American Federation),** Chicago.
Sept. 10-11	**Clinical Applications of Electronics in Cardiovascular Disease,** Rochester, Minnesota.
Sept. 10-12	**American Association of Obstetricians and Gynecologists** (members and invited guests), Homestead, Hot Springs, Va.
Sept. 11-12	**Conference on Diseases Common to Animals and Man,** University of Nebraska College of Medicine, Omaha.
Sept. 17-19	**National Concer Conference (fifth),** Bellevue Stratford Hotel, Philadelphia.
Sept. 20-25	**Michigan State Medical Society,** Sheraton-Cadillac Hotel, Detroit.
Sept. 21-25	**Pulmonary Disease Seminar,** Fitzsimons General Hospital, Denver.
Sept. 24-26	**Electrocardiography in Infants and Children,** Henry Ford Hospital, Detroit.
Sept. 24-26	**Clinical Orthopaedic Society,** Kahler Hotel, Rochester, Minnesota.
Sept. 26-27	**Occupational-Health Congress,** Rice Hotel, Houston.
Sept. 27-Oct. 2	**Flying Physicians Association,** Riviera Hotel, Palm Springs, Calif.
Sept. 28	**Society for Pediatric Radiology,** Radisson Hotel, Minneapolis.
Sept. 28-30	**Environmental Diseases of the Heart and Lungs,** Pick-Carter Hotel, Cleveland.
Sept. 28-30	**Kansas City Southwest Clinical Society,** Hotel Muehlebach, Kansas City, Missouri.
Sept. 30-Oct. 2	**Seminar on Diabetes and Related Endocrine Disorders,** Balmoral Hotel, Miami Beach.

ABROAD

Aug. 16-22	**International Congress for Social Psychiatry,** London. Info: 7 Hollycroft Ave., London NW3.
Aug. 29-Sept. 5	**International Society of Urology,** London. Sec.-Gen.: D. Innes Williams, 61 Harley House, Marylebone Road, London NW1.
Aug. 30-Sept. 5	**International Congress of Hematology (tenth),** Stockholm. Sec.-Gen.: Lars E. Bottiger, M.D., Box 638, Stockholm.
Sept. 19-26	**International Federation of Gynecology and Obstetrics,** Buenos Aires, Argentina. Pres.: G. di Paola, Ira Catedra de Ginecologia, Hospital de Clinicas, Cardoba 2149, Buenos Aires.
Sept. 20-26	**World Congress of Anesthesiology (third),** Sao Paulo, Brazil. Sec.: Leao Machado, Caixa Postal 330, Sao Paulo.

"Syndrome Shift"

Some people seem able to develop a new disease as fast as an old one disappears. The phenomenon, termed "syndrome shift," was described by Dr. J. J. Groen, Jerusalem, Israel, in the July issue of ARCHIVES OF INTERNAL MEDICINE. It isn't a rare occurrence, he explained, and sometimes patients show more than one shift, or shift back into the original disease.

Syndrome shift is seen mostly in patients with disorders involving the central nervous system, whether a typical mental disease or a psychosomatic disorder. It is rare in patients with infectious diseases or tumors, he said, but it is striking how often the shift is from a psychic to a somatic syndrome, or *vice versa.*

Although a shift may occur without apparent reason, the switch often takes place after some form of medical treatment which, without eradicating the cause of the disease, interferes with its natural course, he continued. In several cases, it seemed as if a therapeutic effort, meant to improve the patient, had only brought about a shift in symptoms, and not always a change for the better. When treatment was stopped, the patient shifted back into the original ailment.

In other instances, Dr. Groen pointed out, a change of circumstances under which the patient lived seemed to produce the shift. For example, a psychopathic burglar who had been sentenced more than 20 times for house-breaking was ordered to a mental hospital by a well-meaning judge. The patient appeared responsive to the change in environment, including group and occupational activities, so that when he was released and encountered difficulty in finding an "honest job," he did not return to burglary. Instead, he developed a duodenal ulcer.

Dr. Groen suggested that syndrome shift is a manifestation of the fundamental capacity of the central nervous system to substitute one reaction pattern for another, under changing circumstances.



INFECTIOUS DISEASES TODAY AND TOMORROW

In the lifetime of today's practicing physicians, an impressive fall in the mortality from infectious diseases has occurred. Diseases such as Asiatic cholera, smallpox, malaria, diphtheria, typhoid, bovine tuberculosis and poliomyelitis have been essentially eradicated from the state of Iowa. Many other diseases such as pneumococcal pneumonia, influenza, pyelonephritis and others have continued unabated. This has not been obvious because of an undue emphasis on mortality rather than morbidity. Recent surveys have shown that in the practice of internal medicine in hospitals 10-15 per cent of the patients have a primary diagnosis of acute infectious disease, and in general practice the incidence is close to 40 per cent. In other areas of medicine, the incidence is intermediate. Morbidity will be better understood when the notification of infectious disease cases is improved. At University Hospitals, this takes place from the discharges through the Record Room—a highly successful system. Urgent notifications are made by phone to the State Health Department.

Recently, as the control of staphylococcal infections has significantly improved, we have noted an increase in the infections caused by E. coli and Pseudomonas aeruginosa. Infection is continually subject to the ebb and flow of different diseases. These gram-negative rod infections, which require careful laboratory studies for diagnosis and treatment, emphasize the need for better microbiologic laboratories in the hospitals in the state. Inspection and certification are needed to ensure the use of the newest methods and the highest standards of accuracy. New diseases are "appearing," such as Q fever, leptospirosis, listeriosis and atypical mycobacterial infections, among others. The laboratory workers need state-sponsored courses in these new technics and visits to the Communicable Disease Center in Atlanta, Georgia, and attendance at meetings of the American Society of Microbiology. A tendency to recoup the financial losses of hospitals through the profits of the microbiologic laboratory must be halted. This leads to a dangerous "try and see" attitude in the use of antibiotics, and a resultant life-threatening risk to the patient which cannot be tolerated. Diagnostic and treatment control tests must be available at realistic prices through private laboratories or free of charge in certain diseases (as it has been with tuberculosis) through the State Hygienic Laboratory.

The need for good virus diagnostic and virus epidemiologic laboratories is urgent. Three or more antiviral chemotherapeutic agents are now available, and others will soon be available.[1, 2, 3] The ability to treat leads to the necessity for accurate diagnosis. We are on the threshold of the diagnosis of human virus tumors which will lead to an increased need in the same laboratories.

The world has shrunk. Instead of knowing the distance between various centers, we must remember that Iowa is only 10.5 hours from London, 16 hours from Cairo, 17.5 hours from Tokyo, 19 hours from Moscow, 23 hours from Hong Kong, 26 hours from Calcutta and 26 hours from Singapore.

Please note that these times are less than the incubation periods of most infectious diseases. A recent survey of a village 19 miles from Cairo showed that 95 per cent of the population had schistosomiasis, 93 per cent amebiasis, 89 per cent trachoma, 78 per cent fleas, 58 per cent positive tuberculin reactions, and 50 per cent lice. Recently in Iowa City we have seen 2 cases of leprosy, 2 of salmonellosis, 1 of shigellosis, 2 of amebiasis and 2 of hookworm imported from abroad. Our colleagues in recent months have also seen amebiasis, leprosy, trachoma and schistosomiasis. In Johnson County this year there will be at least 500 contacts with the world outside the USA by virtue of 254 new passports issued to county residents, 50 renewals, 180 new foreign students or M.D.'s coming here for training, and perhaps 20 or more foreign notables passing through town. Remember that four or so years ago there were 45,000 cases of smallpox with 21,000 deaths in Pakistan, and that false vaccination certificates are for sale in many foreign countries.

In the local area, at the University Hospitals, this increased activity in the infectious disease areas has led to an expansion of the staffs in the Infectious Disease Division of the Department of Internal Medicine, in the Microbiological Diagnostic Laboratory and in the State Hygienic Laboratory. A new interest in infectious diseases has developed in the Department of Obstetrics and Gynecology, and the Department of Pediatrics is actively looking for replacements in its Infectious Disease Division. At the national level, a new newspaper ANTIBIOTIC NEWS AND REPORT ON INFECTIOUS DISEASES will shortly appear, and the specialists in those diseases have formed the Infectious Disease Society of America. World infectious disease remains an important part of the practice of medicine. It will increase in importance in the years to come.

IAN M. SMITH, M.D.
SERGIO RABINOVICH, M.D.

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THE RISING COSTS OF COLLEGE EDUCATION

An article in the NEW YORK HERALD TRIBUNE for April 10, 1964, by Terry Ferrer, an educational writer, contained sobering news for parents who contemplate sending their children to college in the years ahead. According to information obtained from the College Board's Scholarship Service, the cost of a college education is rising at the rate of about five per cent per year. Based on this cost increase, it is estimated that between 1968 and 1978 it may cost the father of four children a sum in excess of $61,000 to send his youngsters to a private college. The estimated cost of sending them to a public institution would be about $39,500. If instead of an annual increase of five per cent, there should be a rise of only three per cent, the respective figures would be $54,000 and $32,000. By 1978, it is estimated, just one year in a private college will cost between $3,900 and $5,200, and in a public institution somewhere between $2,300 and $3,100, depending upon the percentage of annual increase in cost.

The author states that according to the U. S. Office of Education, this year's average costs were $2,300 per year in a private college, and $1,500 in a public one, but that starting this fall these costs will be $2,370 and $1,560, respectively. From available information, the minimum cost for the school year 1964-1965 at Princeton University will be $3,250, and that figure is representative of the costs at Ivy League schools. The basic costs at Grinnell College for the coming year will amount to $2,500. At the State University of Iowa, the bills for a student in the College of Liberal Arts will be $340 for Iowa-resident tuition, $880 for board and room, and $145 for fees, making a minimum total of $1,365 per year. At Iowa State University, Ames, they will be somewhat less—$345 for tuition, $660 for board and room, and $100 for fees, making a total of $1,105.

Inquiries of several parents who have children attending state schools indicate that it has actually cost them approximately $2,000 per year at S.U.I. and $1,500 per year per student at I.S.U.

According to the parents of several students who have recently graduated from the S.U.I. College of Medicine, it has cost them from $7,500 to $10,000 for the four years of medical school. A young man who graduated from a privately endowed medical school in Chicago had a total cost of $14,400. A student in an eastern medical school finds that his costs are about $4,000 per year.

A recent article in the Northwestern University Medical School's magazine points out that although the current tuition is $1,560 per year, tuition receipts represent only 12 per cent of the institution's annual expenditures. Despite the fact that its endowment has increased, income from that source provided just 19 per cent of the costs in 1947-1948, and only 13 per cent during the past year. Obviously, much of the costs of medical education are met out of incomes other than fees paid by students.

Scholarships are available for qualified undergraduate students, but they are predicated strictly on need. Parents of scholarship-applicants must submit detailed accounts of their finances. It is estimated that $450 million is available in this country for undergraduate scholarships, jobs and loans, but when one considers that there are 4.5 million students, he realizes that this amounts to only about $100 per student. Direct scholarship grants, either full or partial, are granted to no more than about 10 per cent of college students. Under the National Defense Education Act, the federal government will lend money to undergraduate students, but only on the basis of demonstrated need and in amounts limited to $1,000 per year. Each loan starts bearing interest at three per cent one year after the student's graduation.

The cost of educating young people today is a serious concern not only to parents but to the private and public colleges and universities, and to the state and federal governments. According to the U. S. Commissioner of Education, 25 per cent of the nation's most capable youth fail to enter college because of lack of money. Available data indicate that most of the medical students in this country come from families within the upper 20 per cent income bracket. This fact suggests that the sheer cost of a medical education is excluding a huge number of talented young people from becoming physicians.

These constitute a set of closely related problems for which there must be a set of answers, rather than just a single one. Two sources of loans are available to medical students. First, the medical profession has a national program and, here in Iowa as in most other states, a state program. The AMA Educational and Research Foundation provides loan guarantees through commercial banks to medical students, internes and residents. This plan is limited to $1,500 per year, and to a total of $10,000 for the entire period of training. The rate of interest is 5½ per cent initially, and it increases to 6½ per cent during the payback period, which begins one year after the recipient has completed his training. The Iowa Medical Foundation loans are made from money that Iowans—most of them physicians—have contributed, they are merely administered by a bank, and interest is charged on the amounts borrowed only after the borrower has finished his training and entered the private prac-

Editorials continued...

tice of medicine. Thus far, loans from this source have been available just to juniors and seniors in medical school, but it is hoped that as funds are accumulated they can be made to students at earlier points in their training.

Second, the federal government's loan program is limited to $2,000 per year, and interest is charged at the rate of three per cent during the period over which the loan is repayable, which begins one year after the recipient's graduation from medical school.

Physicians everywhere should encourage qualified young men and women to consider careers in medicine seriously, and they should assure them that, though the road is long and the cost is high, there are loans, job opportunities and a few scholarships which make it possible for any capable and ambitious student to gain a medical education.

Those of us who intend to provide undergraduate-college and medical educations for their children must take note of the rapidly increasing costs, and raise their sights as regards the necessary accumulations of funds. Those others of us who are in position to do so should make immediate contributions—or plan future gifts and bequests—to the AMA-ERF, to the Iowa Medical Foundation and to their respective medical schools, so as both to help capable students whose parents lack funds with which to assist them, and also to help the colleges close the continually reopening gap between tuition receipts and either endowment income or governmental support. To the extent that such gifts fall short, medical-school officials will be impelled either to seek additional federal funds or to raise tuition rates, thus discouraging well-qualified aspirants for medical education.

Have you forgotten how poor most of us were when we were in school, and what a rough financial road we traveled? Please give!

NEW SOCIAL SECURITY PROPOSALS

Physicians everywhere will be pleased by the fact that the administration's "Medicare Bill" (H.R. 3920, or the King-Anderson Bill) failed to win the approval of the House Ways and Means Committee, and will not be submitted to Congress at this session by that group.

It should be emphasized, however, that the Bill's failure to come out of the Committee must *not* lull the medical profession into inactivity. To the administration, the set-back will seem no more than temporary, and it will strive hard to elect candidates who will approve a broad system of medical care under Social Security. The promise of so-called "free" medical care remains highly attractive to a large segment of the body politic.

The best defense against further incursions by the federal government into the practice of medicine is to make Medical Assistance for the Aged (Kerr-Mills Act, public law 86-778) a success. Such a result will discourage any of the several major types of socialized medicine which have been under consideration at various times in Congress.

Just as happened two years ago, it is again possible that proponents of King-Anderson in the Senate may try to attach it as a rider when the House Ways and Means Committee's proposal for an increase in cash benefits to OASI eligibles reaches that chamber. Such a maneuver, if attempted, is almost certain to fail once more, but Iowa physicians and their friends would be wise to warn their senators against it.

Furthermore, doctors and their wives should take note that the Ways and Means Committee bill to raise OASI cash benefits includes a section calling for compulsory coverage of all physicians previously exempted. They will want to ask both their representatives and their senators to disapprove that!

The medical profession must make it clear that it is not opposed to sound social legislation, but believes emphatically that retirement income and medical care must be provided by the government only for those who are unable to provide it for themselves. It must make equally clear that the profession is unalterably opposed to legislation which fosters a welfare state, and which discourages individual responsibility and initiative.

RELEASE

Fortunate is the individual who can pause in the day's occupation and find momentary escape from the impact of life's realities. It is good for him to dream dreams, to find a fairyland in the simple things around him, and then return to the mundane business of living.

Occasional flights of fancy will help the harassed physician forget for a few minutes some of his responsibilities and worries. A little poem by Eva Rouke is such a flight of fancy:

OLD SONG

The ear allows
a small deceit
when I can hear, far from the sea
the sweep of surf
in sound of rake on leaves;
and thus arouse a melody
laid fallow in the turf
of time's reprieves;
a bittersweet
deceit.

SURGERY FOR DUODENAL ULCER

An interim report by Goligher and colleagues regarding an unusual clinical trial of three different surgical methods for the treatment of duodenal ulcer is of exceptional interest.* The study was restricted to patients undergoing elective surgery for the condition in three large general hospitals at the hands of nine different surgeons during the period from April, 1959, to August, 1962, in an endeavor to assess the relative advantages and disadvantages of the three operations under consideration.

The three types of surgery were: (1) vagotomy and posterior gastroenterostomy; (2) vagotomy and antrectomy; and (3) ordinary subtotal gastrectomy.

The essential features of the study were that patients were assigned in random fashion for the different operations, and a very careful and uniform system of follow-up was utilized consistently. In order to safeguard the welfare of the patient, there was an "escape clause" in the plan which allowed each surgeon to remove particular cases from the series, either before laparotomy or afterwards as a result of the operative findings. Follow-up clinics were conducted six months and one year after the operation, and annually thereafter. At the clinic, patients were usually interviewed by a small panel of physicians who had no advance knowledge of which operation had been performed.

During the three-year period of the trial, 634 patients were operated upon for the treatment of duodenal ulcer. Of that number, 127 were women, and it was decided that they constituted a group too small to provide statistically significant numbers when broken down into several categories. Thus, they were not included in the study. Of the 507 men who were admitted to the trial, just over one-fourth, or 132, were rejected for various reasons such as anticipated technical difficulties, poor general condition, undernutrition, recent or repeated bleeding, history of tuberculosis, etc. Most of the rejectees were treated by vagotomy and gastroenterostomy, but they were not included in the statistical studies.

The remaining 375 men were accepted for the study and were operated upon by methods determined by random allocation: 126 underwent vagotomy and gastroenterostomy; 132 had vagotomy and antrectomy; and 117 were subjected to subtotal gastrectomy.

There were no operative or hospital deaths among the 507 men initially admitted to the trial, or indeed in the total of 634 patients operated upon—a remarkable record. There were 16 deaths that occurred months or years after discharge from the hospital, but all of them were unrelated to the ulcers and to the operations.

Follow-up studies were restricted to the 360 male patients in the trial, with whom the authors were still in contact, either at clinics or by means of special home-visits. The follow-up period varied from one to four years, and the mean was just under two years. The interim report on the follow-up study is based upon the latest findings on each of the 360 traced male cases in the trial.

The authors emphasize that in considering the results of follow-up studies, the interim nature of the report must be considered. The follow-up period has been too short to justify a final, comprehensive verdict concerning the relative merits of the three operations in the elective treatment of duodenal ulcer, but certain tentative conclusions seem justified:

1. The complete absence of operative mortalities probably should not be taken as an indication that results would be equally good if one of them were used exclusively. However, with a certain degree of selection, even resection can be remarkably safe if performed by a competent and experienced surgeon.

2. Vagotomy and gastroenterostomy results in less nutritional disturbance than does subtotal gastrectomy. In the effect upon nutrition, vagotomy and antrectomy appears to occupy a position midway between the other two procedures.

3. Most of the common symptoms due to postoperative disturbance of gastrointestinal function occurred with about equal frequency after the three operations. However early dumping occurred much more frequently after subtotal gastrectomy, particularly when moderate and severe grades of symptoms were considered. Diarrhea was much more frequent after vagotomy, particularly with gastroenterostomy, but the number of patients so inconvenienced was small, and diarrhea was mild.

4. There were only nine instances of suspected or proved ulcer-recurrence in the 360 patients followed. Those occurred following all three operations, and the numbers were too small to justify any deductions concerning the relative merits of the different procedures in curing the ulcer diathesis.

5. As for the overall functional status and general well-being of the patients, the results from subtotal gastrectomy appeared to be slightly better than those from the other two operations, particularly vagotomy and gastroenterostomy. However, the differences were not statistically significant.

The comparative study by Goligher and his colleagues was a courageous attempt to resolve a difficult and controversial problem. The results will be questioned by surgeons who have found one procedure superior to the others in providing relief from symptoms and cures of the disease. The

* Goligher, J. C., Pulvertaft, C. N., and Watkinson, G.: Controlled trial of vagotomy and gastro-enterostomy, vagotomy and antrectomy, and subtotal gastrectomy in elective treatment of duodenal ulcer; interim report. BRITISH M. J., 1:455-460, (Feb. 22) 1964.

Editorials continued...

absence of a single operative death among the 634 patients who underwent gastric surgery is a record that will prompt the admiration and respect of every gastric surgeon.

CONGRATULATIONS TO DR. WARD



The physicians of Iowa congratulate Dr. Donovan F. Ward on his election to the office of president-elect of the American Medical Association. His attaining this, the highest office in organized medicine in the United States, is a fitting recognition of his many years of dedicated service to the profession, and of his contributions to the solution of medical problems at the state and national levels.

It is with a feeling of pardonable pride that the doctors of the state see one of their number attain a position of such responsibility in the profession. His ability and stature have been recognized by his colleagues here in Iowa, who repeatedly during the past 10 years have chosen him as one of their delegates to the AMA.

The physicians of Iowa commend Dr. Ward to the physicians of the nation. The medical ship of state will be in capable hands, and it will be guided by a sound and conservative philosophy.

We beseech, for Dr. Ward, God's special blessing and guidance to help him fulfill the responsibilities of his office with distinction.

Eating Unrelated to Hunger Pangs In Obese

Overweight persons are largely insensitive to the hunger pangs that help most people regulate the amounts of food they eat. Writing in the July issue of ARCHIVES OF GENERAL PSYCHIATRY, Drs. Albert Stunkard and Charles Koch, of the University of Pennsylvania, reported "strikingly different patterns" between obese and non-obese subjects revealed in tests aimed at correlating stomach contractions and consciousness of hunger.

During a four-hour test, 74 obese and non-obese men and women were asked at 15-minute intervals whether they felt hungry, while contractions were recorded by means of balloons that had been inserted and inflated in their stomachs. Stomach contractions did not appear to differ between the obese and the non-obese.

Non-obese women showed a high correlation between gastric motility and hunger, and between an absence of motility and a lack of hunger. Most of the obese women failed to show a comparable correlation. Non-obese men did not show so high a degree of correlation, but their responses showed no consistent pattern of bias. Such a bias was a prominent feature of the responses of the obese men.

Obese subjects seemed particularly prone to one extreme or the other—always hungry or never hungry. Obese women demonstrated a "nay-saying" bias—i.e., denial of hunger in the presence of gastric motility. Obese men tended toward a "yea-saying" bias, reporting hunger even when gastric motility was absent. The results suggested that many obese persons have a bias that may interfere with the normal association between hunger and stomach contractions, the authors concluded.

"The regulation of food intake is achieved by adjusting current intake to both prior intake and changing levels of energy expenditure," they said. "In most people these adjustments seem to occur largely unconsciously, and with remarkable sensitivity to appropriate cues. If, however, a person has difficulty appreciating these cues . . . then automatic, unconscious regulation of food intake may not be possible."

As to the type of bias among men and women, the researchers said: "It seems reasonable for an obese housewife, who can overeat in the solitude of her kitchen, to underestimate food intake. For

IMPORTANT NOTICE

IMS Fall Conference for County Medical Society Officers and Other Representatives—

Sunday, September 13, 1964
Hotel Savery
Des Moines

an obese man, who must often do his overeating in public, such deception may not be feasible, so he may take refuge in a jovial, stereotyped assertion of his appetite."

Dr. Stunkard also reported that a later study of one obese person with a nay-saying bias implied that the disordered hunger feelings of some obese persons result from past experiences which fostered their development. This subject, a man, was able to overcome his bias and detect gastric motility, but this newly-found ability had no apparent effect on his overeating.

The outcome appears to provide further confirmation of the relative unimportance of the stomach in the regulation of food intake, Dr. Stunkard commented. Only when visceral perceptions are integrated into a more complex motivational state of hunger, may favorable changes in perception favorably alter the regulation of food intake, he declared.

Dr. Stunkard is a professor of psychiatry, and Dr. Koch is a resident in the same specialty.

Iowan Gets Tobacco Research Grant

Raymond M. McKeown, M.D., president of the AMA-ERF, recently announced seven new tobacco-research grants, to cost a total of $183,000 for the first year, and said one of them would go to an Iowan, J. P. Long, Ph.D., of the S.U.I. College of Medicine. Duration of the projects range from one to five years, and the full commitments will total about $440,000.

These seven compose the second group of such projects to be approved by the Foundation. In June, Dr. McKeown announced approval of 10 project grants under the program authorized by the AMA House of Delegates at its interim session at Portland, Oregon, last December. If all 17 thus far approved are carried to completion, their total cost will approximate $1,300,000.

Dr. Long was granted $21,750 to investigate the action of nicotine on the autonomic nervous system.



Mr. Donald L. Taylor, executive secretary of the Iowa Medical Foundation (right), is shown handing a check for $1,500 to Dr. George H. Scanlon, president of the Foundation. It was a gift from the Hancock-Winnebago County Medical Society.

It is hoped that other organizations and individuals, both lay and medical, will make contributions to the Iowa Medical Foundation, either occasionally or on a regular basis, for the support of loans to medical students, research projects and similar projects in which the Iowa Medical Foundation is interested.

President's Page



All Iowa physicians congratulate the new President-Elect of the American Medical Association, Doctor Donovan F. Ward.

Iowa claims many outstanding physicians, past and present, but only two have been chosen for this honor; the other being the late Walter L. Bierring, M.D., 1933-35.

This acclaim speaks for Doctor Ward's stature as a medical statesman, and acknowledges his capacity for leadership.

This is a singular triumph for Doctor Ward, projecting the confidence of his many friends and colleagues all over the country. It also reflects, in some measure, the prestige of Iowa physicians and the Iowa Medical Society at the national level.

Otis D Wolfe

President

THE JOURNAL *Book Shelf*



BOOK REVIEWS

STRATEGIES OF PSYCHOTHERAPY, by *Jay Haley* (Grune and Stratton, Inc., New York, 1963. $7.75).

Any attempts to "explain" human behavior within the framework of a single, general theory have usually proved less than adequate to the task. Despite this, even sophisticated critics well-grounded in logic and scientific method concede that whatever flaws there be in the various systems of explanation, therapists do influence and change the adaptational patterns of individual human beings and do so by means of various technics of so-called psychotherapy. In most instances the methods employed have been defined by the particular "school" with which the therapist is associated, and he in turn accounts for both his technics *and* his results on the basis of the particular general theory to which he subscribes, e.g., Freudian, Adlerian, Rogerian, Sullivanian, etc. Since therapists from quite divergent schools, treating similar behavioral syndromes, all have successes (and failures), there has continued to be a need for specialized studies of (1) the conduct of therapy, and (2) the nature of the relationship between therapist and patient. The former lends itself more readily to fairly rigorously defined investigative procedures, but even so, the interpretations tend to find expression in the colorful metaphors of the particular school conducting the research. Studies of the nature of the therapist-patient relationship are methodologically imprecise, and too often what is presented as data are only inferences.

The present volume is a study of the relationship between patient and therapist, but in this instance both the form and content of the relationship are examined in the framework of "communication theory," unencumbered by established concepts or schools of personality dynamics. Purists may object on the grounds that the author is neither a psychologist nor a psychiatrist, but such protests beg the question. Haley is a serious student of human behavior who has worked closely with clinicians in a psychiatric milieu while applying his highly specialized knowledge to familiar clinical problems. He wants to know *what* happens in therapy and *how* it alters the behavior of patients. This book is an exposition of his theoretical position, his personal experiences, and his suggestions for therapists regarding strategies for a more effective conduct of treatment. In short, the author examines the psychotherapeutic process in terms of behavior rather than as intrapsychic processes whose nature can only be inferred. Psychiatric patients are described as people who use symptomatic behavior to gain an advantage in a relationship and to resist the definitions of others. Symptoms are seen as tactics in human relationships, and the tactical maneuvers of the therapist enable the patient to abandon symptoms in favor of a more mature and acceptable behavioral repertoire.

Several chapters are devoted to the study of the technics of various therapeutic relationships—hypnosis, directive therapy, psychoanalysis, non-directive therapy, *et al.* Regardless of the particular school, certain strategies are common to all, and can be defined in terms of communication theory. The author also examines what happens in marriage counseling and family (group) therapy. Again the same phenomena are discovered. Reduced to their common denominators, "The psychotherapist (a) sets up a benevolent framework defined as one where change is to take place, (b) he permits or encourages the patient to continue with *unchanged* behavior, and (c) he provides an ordeal which will continue as long as the patient continues with unchanged behavior." The author assumes that psychopathology occurs because man is a "classifying" animal, and that change occurs when a person must resolve paradoxes posed in terms of his classification system. The strategic doctrine of *all* psychotherapies ultimately expresses itself in the maneuvers and counter-maneuvers of therapist and patient and, as a model relationship, permits both the reenactment of old relationships and the establishment of new ones. The therapeutic paradox resides fundamentally in that strategy of the therapist which encourages the patient to continue his symptoms while at the same time it induces him to abandon them voluntarily. In this subtle maneuvering, the symptom as a tactic in human relationship, by not being opposed and at the same time being rendered ineffective, begins to lose its utilitarian value, and the patient begins to search for new modes of relating. This does not by any means suggest that the therapist is naively permissive or non-directive. Activity is much in evidence as the therapist repeatedly confronts the patient with statements and acts which pose new paradoxes to be resolved.

Critics who insist that only by the attainment of "deep insight" can the patient be really *cured* will find that the author neither denies nor confirms the value of insight *per se*. Instead, he argues that what happens to insight en route is of equal or more importance, and that insight by itself is meaningless. Insight, in a classical Freudian analysis, would be somewhat different from that required by an Adlerian or a disciple of some other school, since not all schools agree on the symbolic function of particular symptoms. In an artful and richly humorous concluding chapter entitled, "The Art of Psychoanalysis," the author interprets typical analytic procedures in terms of both "lifesmanship" and communication theory. By this minor tour-de-force, he offers a unique exposition of his personal views and a critique of all psychotherapy. To his credit, Jay Haley neither belittles the achievements of others nor offers himself as the new prophet. What he does is to give us a new perspective on some old and fascinating problems.

For psychiatrists, this book should be required read-

ing. It cannot but compel us to re-examine our private concepts and our technics. For physicians in general, I also strongly recommend the reading of this work. It will enlighten the skeptical, and inform those who have wondered what goes on in the inner sanctum.—*Sidney L. Sands, M.D.*

CURRENT DIAGNOSIS AND TREATMENT, by *Henry Brainerd,* M.D., *Sheldon Margen,* M.D., and *Milton J. Chatton,* M.D. (Los Altos, California, Lange Medical Publications, 1964. $9.50).

This book appears to fulfill the wishes of its authors, in being a very useful desk reference. Even though the book contains 870 pages, the variety of subjects covered is remarkable. There is an excellent chapter on fluid and electrolyte disorders. The appendix includes some recently introduced drugs, as well as some recently withdrawn drugs.

Any physician feeling the need for an easy-to-read, quick reference book containing a wealth of information would do well to inspect CURRENT DIAGNOSIS AND TREATMENT, by Dr. Henry Brainerd and his associates.—*John W. Ferguson,* M.D.

HANDBOOK OF PHYSIOLOGY, SECTION 2: CIRCULATION, VOLUME 2, ed. by *W. F. Hamilton* and *Philip Dow* (Baltimore, The Williams & Wilkins Company, 1963. $32.00).

This volume, published under the auspices of the American Physiological Society, is the second of the circulation section in the multi-volume "Handbook of Physiology" series. The first section published was on neurophysiology, and it is to be succeeded by sections covering divisions of physiology such as respiration, environmental physiology, excretion, endocrine physiology and others. The circulation section is to consist of three volumes. The second volume deals with the functional morphology of the vessels and their coordination in supplying blood to the several organs. The several chapters cover limited fields in greater depth than a textbook, but are written to introduce the field to the nonspecialist or to the graduate student early in his career. Fundamental concepts are emphasized. Because this is considered one of the more important publications of the American Physiological Society, and because important concepts have been emphasized, it is the expectation that by minor periodic revisions, the section can be kept up to date and that the book will enjoy a long usefulness.

Each of the 25 chapters in this volume is written by one or more experts in the field. An attempt has been made to group the chapters into ones which deal with the pumping of blood and the maintenance of flow throughout the circulation, including microcirculation and lymphatic channels. These chapters are followed by three concerning the effect of ions on vascular smooth muscle, a lipid metabolism in relation to physiology and pathology of atherosclerosis, and finally a chapter concerning the roles of the endocrines, stress and heredity on atherosclerosis. Ten chapters on regional blood flows complete the volume.

Although this book is a technical one, the information included in it makes it of use to many physicians. There can be little question that physicians interested in the circulation in general, or those who have a special interest in one area of the body, will find it a useful source of information. Although very few of the matters discussed can be immediately transformed or transferred into clinical situations, the ideas expressed are the basis for many of our diagnostic procedures and much of our therapy in clinical cardiology. The first volume of this section, which includes background information on physiology and biophysics of the blood and exchangeable fluids together with the action and control of the heart, is also an extremely useful reference. These two volumes, although relatively costly, are not likely to be duplicated by any other set of articles in the near future. They should be a part of all general medical libraries, and they should be considered for the libraries of cardiologists. Unless one has a special interest in the circulation, however, it is unlikely that these volumes would pay for themselves. —*Walter M. Kirkendall, M.D.*

INTERNAL MEDICINE IN WORLD WAR II, VOLUME II—INFECTIOUS DISEASES, edited by *Col. John Boyd Coates, Jr.,* M.C., and *W. Paul Havens, Jr.,* M.D. (Washington, D. C., Office of the Surgeon General, Department of the Army, 1963).

The history of internal medicine in World War II is concerned with clinical descriptions of certain infectious diseases, and brings into sharp focus their impact on activities under a variety of circumstances in many different parts of the world. For anyone interested in military medical history, it affords engrossing reading, and it is very well documented with statistics and has numerous interesting illustrations.

Of particular interest to this reviewer was the chapter on "Cutaneous and Other Aspects of Diphtheria," for these were new and serious problems for the U. S. Army during the Second World War. Similarly important is the chapter on "Malaria," which recounts the struggle to develop an antimalarial drug when the supply of quinine was controlled by the Japanese and the supply of atabrine was in the hands of the Germans. It is pointed out in this volume that due to the knowledge and diligence of our medical officers and to the introduction of new drugs, World War II was the first great conflict in which fewer of our troops died of disease than of battle injuries and wounds.—*Pat M. Cmeyla,* M.D.

BOOKS RECEIVED

BETTER HEALTH FOR WOMEN, by *Charles Richard Alsop Gilbert,* M.D., illustrated by *Phyllis Anderson.* (New York, Doubleday & Company, Inc., 1964, $4.95).

BUSINESS MANAGEMENT OF A MEDICAL PRACTICE, by *Bernard D. Hirsh,* LL.B. (St. Louis, C. V. Mosby Company, 1964, $7.75).

PHYSICAL EXAMINATION OF THE SURGICAL PATIENT, by *J. Englebert Dunphy,* M.D., and *Thomas W. Botsford,* M.D. (Philadelphia, W. B. Saunders Company, 1964, $8.50).

SCIENCE AND PSYCHOANALYSIS VII, by *Jules H. Masserman,* M.D. (New York, Grune & Stratton, 1964, $9.75).

MODERN TREATMENT, by *Carl Muschenheim,* M.D., and *Richard B. Capps,* M.D. (New York, Harper & Row, March 1964, Bimonthly, $16.00 per year).

DIET AND BODILY CONSTITUTION, Ciba Foundation Study Group No. 17, Edited by *G. E. W. Wolstenholme,* M.B., and *Maeve O'Connor,* B.A. (Boston, Little, Brown and Company, 1964, $2.95).

OCULAR AND ADNEXAL TUMORS, NEW AND CONTROVERSIAL ASPECTS, Edited by *Milton Boniuk* (St. Louis, C. V. Mosby Company, 1964, $25.00).

Iowa Chapter of the American Academy of General Practice

Annual Scientific Meeting

All physicians will be welcome and are encouraged to attend the Sixteenth Annual Scientific Meeting of the Iowa Chapter of the AAGP, to be held at the Hotel Savery in Des Moines on Monday and Tuesday, September 14 and 15, 1964. Registration will begin at 8:00 a.m. on Monday, and the first lecture is scheduled for 9:00 a.m. Four excellent lecturers will speak on that day, each giving two very fine talks on different subjects. The Scientific Committee has worked hard to give you the kind of program which will be good educational material for you. On Tuesday five excellent lecturers will be on the program, with the additional attraction of Dr. James Berbos (the quintuplets' physician) as the luncheon speaker.

The annual business meeting and election of officers will be held immediately following the luncheon on Monday noon and a Social Hour and Buffet dinner is planned for Monday evening. Some very special entertainment is being considered for the evening, as well as dancing.

Following is the scientific program which has been accredited for 11½ hours by the American Academy of General Practice:

Monday, September 14

"The Adolescent and His Family"—Robert P. Masland, Jr., M.D., Boston, Massachusetts

"Grief"—Edward M. Litin, M.D., Rochester, Minnesota

"Pediatric Emergencies"—C. Henry Kempe, M.D., Denver, Colorado

"Peripheral Nerve Lesions"—William R. Lipscomb, M.D., Denver, Colorado

"The Adolescent and His Physician"—Dr. Masland

"Diagnosis and Management of the Symptomatic Intervertebral Disc"—Dr. Lipscomb

"Suicide"—Dr. Litin

"Battered Child Syndrome"—Dr. Kempe

Tuesday, September 15

"Emphysema"—Hurst B. Hatch, Jr., M.D., New Orleans, Louisiana

"Fractures in Children"—Claude N. Lambert, M.D., Chicago, Illinois

"Modern Chemotherapy"—Ian Maclean Smith, M.D., Iowa City

"Postpartum Hemorrhage"—Kermit E. Krantz, M.D., Kansas City, Kansas

"Extrathoracic Manifestations of Bronchogenic Carcinoma"—Dr. Hatch

LUNCHEON SPEAKER—James Berbos, M.D., Aberdeen, South Dakota—"The Care of the Premature"

ERNEST E. SHAW MEMORIAL LECTURE—"Immunologic Aspects of Infertility"—S. J. Behrman, M.D., Ann Arbor, Michigan

"Acute Cervical Spine Sprains"—Dr. Lambert

"Diagnosis of Common Infections"—Dr. Smith

"Cancer in Pregnancy"—Dr. Krantz

W. B. SAUNDERS COMPANY features the following new books and new editions in their full page advertisement appearing on page iii in this issue:

MOORE—GIVE AND TAKE
New!—An intriguing volume relating the inspiring story of tissue transplantation, from its beginnings to modern-day successes.

NELSON—TEXTBOOK OF PEDIATRICS
New (8th) Edition!—Up-to-date help on how to treat the ill child and how to keep the well child healthy.

ELLIOTT—CLINICAL NEUROLOGY
New!—The latest help, ranging from material on the mechanics and physics of brain injuries to advice on the interpretation of somatic pain.

THE DOCTOR'S BUSINESS

New Tax Ruling Places Many Wills in Jeopardy

HOWARD D. BAKER
Waterloo



Since 1948, the federal estate-tax statutes have given an estate owner an opportunity to avoid taxation on one-half of his estate by leaving it to his surviving spouse, either outright or in trust. In the past, the administration and policing of this provision have been concentrated upon the surviving spouse's unlimited control of power of appointment over this portion of the estate.

The marital deduction is probably the single most significant consideration in estate planning. On a $100,000 estate, proper qualification for this deduction can result in tax savings of about $5,000, and the available tax savings range up to $500,000 on a $2½ million estate.

In view of the importance of this provision, it is not surprising that a recent ruling which places the marital deduction in many wills in serious jeopardy has caused a great deal of concern among estate owners and estate planners.

The new ruling is quite complex, but the essence of it is that if an executor has the power to transfer property with a preferential or advantageous value to the spouse or to a trust for her, to satisfy the marital deduction, and if the valuation of this property is inconsistent with the valuation of other property in the estate, the marital deduction may be lost.

The reason for the new Revenue Service action is that it has been possible for an executor to act arbitrarily in distributing the assets. They often have different values at the time of distribution from those which they had at the time the estate tax was assessed. The new ruling directly attacks his arbitrarily assigning newly depreciated or worthless assets to the widow, in satisfaction of the marital deduction, without making a corresponding distribution of similarly depreciated assets to the other beneficiaries. Such discrimination in favor of the other beneficiaries under the will would be at the ultimate expense of the government through reduced estate taxes.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

EXAMPLE

By distributing to a widow property which has declined in value from $200,000 at the date of the testator's death to $150,000 at the date of the distribution, an executor or trustee (1) gains for her a $50,000 capital-loss deduction for federal income-tax purposes, and (2) gains, in effect, a $50,000 federal estate-tax marital deduction for property which the widow actually will never receive.

The marital deduction is based upon a two-estate premise. A marital deduction (50 per cent of the adjusted gross estate) is available for property which, if it remains intact, will be taxed in the estate of the surviving spouse. Through the right to distribute depreciated assets at their estate values, an executor or trustee could gain a marital deduction for property not transmitted—and also could reduce the future taxable estate of the surviving spouse.

REMEDIES

Basically, there are two remedies for presently faulty wills: (1) They can be revised immediately to comply with the new ruling; (2) The executor and the surviving spouse can enter into a post-death agreement with the Internal Revenue Service, if the estate involves a will executed prior to October 1, 1964.

Since this new provision is quite technical and since the proper legal terminology for a valid marital deduction formula is very intricate, it is our recommendation that if you have a will, other than one leaving your entire estate to your surviving spouse, *you should have it reviewed and revised immediately by your attorney!*

Failure to follow through on this change may cost your estate thousands of dollars in excess estate taxes. The offending provision has been widely used over the past five years. *If your will contains a "formula" provision for the maximum marital deduction, it probably is affected by this change!*

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

Do Iowans Ever Stay Home?

Like the state and the other metropolitan health departments, the Sioux City Health Department furnishes information to physicians and to the public about immunizations needed for international travel. It completes and validates all international immunization certificates, after the persons have received vaccinations and immunizations from their private physicians. Certificates made out and signed by physicians are brought to the Health Department for its official stamp and city seal.

Most health officers or their secretaries check each certificate to make certain the entries are proper for smallpox and cholera, apply the stamp and return it to the traveler. The staff members at Sioux City, however, have done more. They have asked each person where he is going, and have tabulated the information. The 809 persons on whose certificates the Sioux City Health Department applied the official vaccination stamp during 1962 and 1963, represent only a very small portion of Iowans who travel abroad.

A stamp has been issued to a health officer in almost every county of the state. Although the international health certificate carries a place for registration of information regarding typhoid, tetanus, typhus and other vaccinations, it is only smallpox and cholera records to which the health officer affixes his stamp.

Yellow fever vaccine is extremely fragile. It must be handled very carefully, kept sharp-frozen, and thawed only for immediate use. For this reason, the physician in private practice cannot purchase this vaccine. It is available only at a licensed yellow-fever immunization center. To accommodate traveling Iowans, the State Department of Health has set up such a center at the University in Iowa City, where Dr. Chester I. Miller, director of the Student Health Service, is in charge. Dr. Miller reports 221 yellow-fever inoculations for the year 1960-1961, 279 for the year 1961-1962, and 344 for the year 1962-1963.

Iowans may obtain information regarding immunizations for overseas travel by writing to the Iowa State Department of Health, Division of Preventable Diseases, and asking for the sheet entitled, "Immunizations for Overseas Travel."

INTERNATIONAL TRAVEL REPORTED
BY SIOUX CITY HEALTH DEPARTMENT

Places Visited	Numbers of Persons 1962	1963
Around the World	5	9
Africa, Asia and Europe	3	
Asia and Europe	7	11
Australia	5	
Asia		17
Africa		3
Africa and Europe		2
Bahamas	1	
Bermuda and Indian Ocean	2	
British West Indies, South America and Mexico	2	
Canada	5	
Caribbean	11	4
Europe	205	202
Greece	8	
Guam		1
Iceland	1	
Korea	7	
Jamaica	11	6
Jamaica and Haiti		2
Japan	6	3
Japan, Hong Kong and Bangkok	3	1
Japan and Thailand		1
Mediterranean Cruise	2	1
Mexico	99	97
Nassau and Bermuda		2
Panama	8	
Panama and South America	2	3
Philippines	5	1
South America	15	18
South Sea Island and South Pacific		2
South Pacific and Orient		2
West Indies	6	
West Indies and Indian Ocean	1	
Total Certificates	421	388

Morbidity Report for Month of June, 1964

Diseases	1964 June	1964 May	1963 June	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	177	468	188	Clay, Jefferson, Johnson
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	562	2084	790	Des Moines, Polk, Scott, Woodbury
Whooping cough	0	77	6	
Brucellosis	7	6	13	Dubuque, Johnson, Keokuk, Monroe, Scott, Wapello
Chickenpox	183	490	444	Dubuque, Polk, Scott
Meningococcic meningitis	3	0	0	Dubuque, Woodbury
Mumps	346	1269	189	Dubuque, Polk, Scott, Woodbury
Poliomyelitis	0	0	0	
Infectious hepatitis	13	29	41	Polk, Scott
Rabies in animals	53	53	41	Entire State
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	17	39	52	For the State
Syphilis	91	78	84	For the State
Gonorrhea	115	130	128	For the State
Histoplasmosis	88	1	5	Cerro Gordo (Delayed cases)
Food intoxication	0	0	0	
Meningitis (type unspecified)	0	2	5	
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	0	1	Polk
Salmonellosis	8	6	12	Johnson, Polk
Tetanus	0	1	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	2	1	
H. influenzal meningitis	0	0	1	
Amebiasis	2	2	1	Boone, Jasper
Shigellosis	3	9	2	Johnson
Influenza	49	198	0	Polk

Skunk Rabies

REPORTED CASES OF RABIES
(First 15 Weeks of Each Year)

Species	1964	1963
Skunk	97	43
Cattle	32	26
Dog	4	1
Cat	4	2
Fox	1	1
Civet Cat	1	—
Horse	—	1
Total	139	74

The table above reveals a marked increase in reported cases (laboratory-confirmed) of rabies during the first 15 weeks of this year. The disease is widely spread in the state as indicated in the map. An asterisk means one or more rabid skunks have been reported from that county. Forty-one counties were involved during this period.

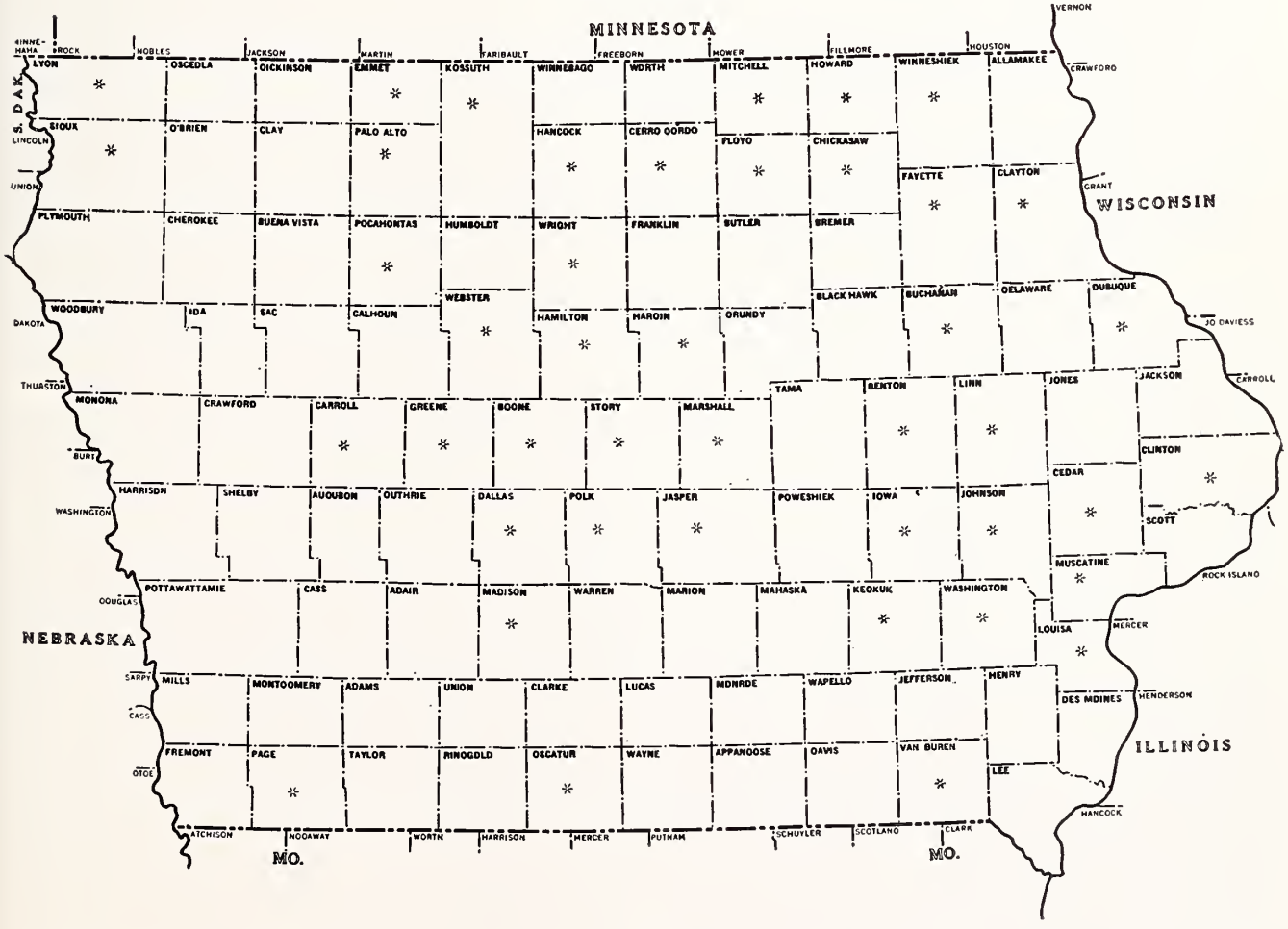
The comments below were submitted with skunk heads sent to the State Hygienic Laboratory at Iowa City for rabies examination. These heads are from counties in Eastern Iowa. Skunk heads from other parts of Iowa usually are sent to the Iowa Veterinary Medical Diagnostic Laboratory at Ames and are accompanied by similar comments. These comments emphasize the abnormal actions of skunks with rabies. They show the need to stay away from wild animals and the necessity for anti-rabies vaccination of pet animals.

County	*Comments*
Washington	"Was out with hogs and cattle."
Johnson	"Would come up by house, would stumble, fall, lie down, get up, and go on."
Keokuk	"Skunk followed dog up onto porch and bit the dog. Dog killed the skunk."
Cedar	"Appeared to have been in fight. Girl tried to pet skunk."
Louisa	"Fought with family dog."
Van Buren	"On March 6, 1964, a skunk attacked some dogs in town."
Washington	"Skunk was shot after biting dog."
Henry	"This skunk was found in yard and was shot. Possibly fought with dog."
Johnson	"Found in barnyard showing no fear."
Johnson	"Animal appeared at door of farmhouse and wouldn't let farmer's wife through the door. Family dog fought with the skunk and was bitten."
Johnson	"Bit a pig as he went by, and then the dog went after the skunk."

County	*Comments*
Keokuk	"No person was bitten, but family dog may have been."
Keokuk	"Was fighting with the dog and chewed dog quite badly."
Linn	"Fighting with dog. Skunk came up into yard."
Muscatine	"Hair gone from head and neck of skunk —moved slowly. Was around family dog."
Keokuk	"This skunk was killed by the family dog during daylight hours."
Iowa	"This skunk was found chasing the horses in a pasture. May have bitten one of the horses. This was during daylight hours; however, skunk appeared to be healthy."
Linn	"Dog was bitten after dog got in fight with skunk. This was during daylight hours."
Linn	"Came after dogs March 21, and then left. Was seen in morning of March 23 and came after man before he could get gun."
Muscatine	"This skunk was in the barn with two calves and cow when shot. The skunk may have bitten one or more of them."
Washington	"Skunk was in the garage with the dog. Would not leave the area."
Buchanan	"Found it on back porch fighting with the dog."
Muscatine	"Attacked two dogs. Only the dogs were bitten, and no humans."

SKUNK RABIES

Distribution of Laboratory-Confirmed Cases (15 Weeks)



Each asterisk indicates that the county had one or more laboratory-confirmed cases of skunk rabies during the first 15 weeks of 1964. Forty-one counties are so marked.

Iowa Association of Medical Assistants

Nine Years of Progress and Promise

October, 1955—That was an important month for medical assistants.

Representatives from six cities in Iowa met in Des Moines to discuss the organization of a state association. Seventy-seven medical assistants from 15 states met in Kansas City, Kansas, to discuss the formation of a national association. Was such an organization feasible or desirable? Present at these meetings were doctors representing county and state medical societies and the American Medical Association.

The medical assistants present were interested in their own need for professional improvement—in the benefits to be derived from educational facilities offered by a national organization.

The doctors viewed these organizations with mixed feelings; the majority approved enthusiastically because they recognized the need for aides specifically trained to work in a physician's office, but a minority anticipated a bargaining agency. However, in November, 1956, the House of Delegates of the American Medical Association passed a resolution commending the objectives of AAMA, and since then has conferred that honor on no other medical assistants' organization. Furthermore, in December, 1962, the AMA House of Delegates passed a resolution wholeheartedly endorsing the AAMA's programs and functions, and recommended that physicians who have medical assistants in their employ should urge them to join AAMA and participate actively in its programs.

In 1959, the Iowa Medical Society gave its Washington Freeman Peck Award to the IAMA in recognition for its service to the medical profession and the public, and for its educational programs for members.

From a nucleus of 77 members from 15 states, AAMA has grown to 12,000 members in 40 chartered states, with a national office in Chicago. Organizations are being formed in still other states. Iowa has 12 active chapters, with a total of 330 members. With each passing year of growth, EDUCATION, and IMPROVEMENT OF ON-THE-JOB PERFORMANCE have increasingly become our bywords.

What does IAMA offer the medical profession?

1. Receptionists, secretaries, bookkeepers, nurses, technicians and assistants who pledge themselves to render honest, loyal and efficient service to their employers and to the public.

2. Assistants who cooperate with the medical profession in improving public relations.

3. An organization which provides educational opportunities for its members' self-betterment.

4. A professional organization whose members pride themselves on their objectives and high ideals.

What does it offer medical assistants?

1. Cooperation and fellowship.

2. Guidance by an advisory board of physicians.

3. Comprehensive group insurance.

4. A placement bureau, through the cooperation of the Iowa Medical Society and the Iowa Employment Service.

5. Opportunities for continued education through planned programs:

   a. Speakers and discussion groups at county meetings.

   b. County study clubs conducted by qualified instructors—physicians, educators and technicians.

   c. Leadership training seminars conducted by trained AAMA leaders.

   d. In-service workshops conducted by university faculty members.

   e. Symposia and diversified educational programs at state and national annual meetings.

   f. Information regarding medical-assistant training at accredited colleges and junior colleges.

   g. Educational materials published on local, state and national levels.

6. Certification for those who desire it, and who meet AAMA qualifications.

7. Professional status and national prestige.

We extend an invitation to membership to all medical assistants who are regularly employed by physician members of the Iowa Medical Society engaged in the private practice of medicine. Membership-at-large is offered to those residing in a section of the state where there is no chapter of this association. If a chapter is subsequently formed in such a locality, members will affiliate with the local chapter.

Physicians or medical assistants wanting information regarding our organizations may write to Mrs. Gladys Knight, President, IAMA, 919 Steely Street, Waterloo, or Mrs. Stella Thurnau, Exec. Secy., American Association of Medical Assistants, 510 N. Dearborn Street, Chicago, Illinois 60610.

—Helen G. Hughes



Everyone Has a Role to Play in

Slowing the Rise in Health-Care Costs

The rapid increases that are occurring in total health-care costs, and in particular the advances that are necessitated in health-insurance premiums, deserve sustained attention from the major groups that are involved, and also from every individual. Each of them can take action to keep these charges from advancing faster than the other constituents in the cost of living, though all prices seem destined to rise from year to year, and an actual reversal of the trend is too much to expect.

Where are the principal increases taking place? Most people will think, offhand, that it must be in physicians' fees—indeed it is a popular habit to speak of nearly all health-care costs as "doctor bills." Yet physicians' services take up no more than 24 cents of each health-care dollar. Drugs, including both prescriptions and over-the-counter medications, take 19 cents; dentists' charges take 10 cents; the portion of health-insurance premium income that isn't handed over to the purveyors of care requires 8 cents; and approximately 11 cents represents the cost of appliances and sundries. The remaining 28 cents, currently, is the hospitals' share. Expenditures for all of these together have been rising by about 2.8 per cent per year, but hospital costs have been increasing so much more rapidly than any of the others—by about 6.1 per cent per year—that physicians' and dentists' fees, particularly, have been declining in importance.

Though hospitals are obviously the places where increases in expenditure must be stemmed, savings will have to be effected by reducing the use that is made of the services provided there. "Bricks and mortar" and hospital equipment are expensive, and can be expected to remain so. Modifications of equipment and the introduction of new devices, moreover, frequently render parts of buildings and some pieces of hospital apparatus obsolete before their time. But salaries constitute the largest and fastest-growing item in every hospital's budget, and they require more and more money not just because nurses, technicians and housekeepers are better paid and work shorter hours than they once did, but also because new medical procedures sometimes require the hiring of additional people or the retraining of some employees.

SUGGESTIONS FOR THE INSURANCE CARRIERS

Through carefully planned advertising campaigns and redesigned salesmen's presentations, it would seem possible for health-insurance underwriters to change the public's preference as regards type of coverage, and even to change a dangerous facet of the popular attitude toward health insurance.

What every purchaser really needs is protection against catastrophic expenses, and policies of the "Major-medical" type best fit that need. It is true, of course, that bills of widely varying sizes would prove unmanageable for people with different sizes of income, different numbers of dependents, etc., but an assortment of major-medical policies might be offered, each with a "deductible" suited to the pocketbooks of a great many customers, and each priced appreciably below the first-dollar coverage that those people have previously bought. The advertisements and sales presentations could demonstrate convincingly that first-dollar coverage is a luxury which the wise man can do without, and could emphasize the savings to be achieved through the purchase of deductible policies.

Few Americans, nowadays, buy first-dollar collision insurance on their automobiles, partially because they haven't confused insurance with prepayment, in that area, and partially because the growing incidence of traffic accidents and the increasing costliness of auto repair have priced full-coverage collision insurance out of the market. Something similar would happen in health insur-

ance if the public were to relinquish its prepayment notion. It is important that the insurance industry should help to correct this popular misconception and to speed the adoption of a different attitude. Too often patients insist on being sent to the hospital when the indications for that step are no more than borderline, or plead to be kept there a few days longer than necessary simply because they think they have been prepaying a lengthy sojourn in the hospital for the past two or three years, and are intent on making full use of their purchase.

SOME IDEAS FOR UNIONS AND MANAGEMENTS

Employers and employees can cut down on the cost of health-care insurance by arranging substitute compensation in instances of double-coverage. When a husband and wife have each been provided insurance for themselves and their children at their respective places of work, they can collect on both policies in the event of a illness or injury. Sometimes they are a bit shamefaced about doing so, but they can tell themselves that the premiums have been paid on both. Instead, if either the man or the woman received an extra sum each payday, in lieu of one of their health-insurance premiums, the family's protection would remain intact, everyone concerned would be just as well satisfied, and policyholders in general would be benefited.

Union members may agree that savings effected by eliminating double-coverages—and those, too, that might be achieved by a shift to policies containing deductibles—would leave more money for employers to use in providing other fringe benefits or increases in wages.

FACTORS FOR THE PUBLIC TO CONSIDER

All Americans should acknowledge that they are being very well served as regards both health-care and health-care insurance. Most of us can clearly remember the days, not so long ago, when a diagnosis of tuberculosis foreshadowed years of sanitarium care, and cast doubt on the victim's ever again holding a job or otherwise living a normal life. Many of us can recall the time when pneumonia was frequently a fatal disease, and when almost any type of surgery gravely endangered the patient's life. Nowadays, thanks to improvements in all segments of health care, nearly every disease is curable, if detected promptly, and illness rarely incapacitates a young and previously healthy person for life. Furthermore, the private, voluntary health insurance we have today will protect families against the financial disasters that illness used to cause, provided that it is not subjected to widespread abuse.

One thing that individual citizens can do, to keep their health-insurance premiums from increasing more rapidly than their incomes rise, is to make arrangements for their aging relatives to leave the hospital as promptly as possible. The doctor who has treated an elderly person can't discharge him or her to return to an empty home or to be tended by an equally aged and infirm spouse. Responsible and capable relatives have a civic as well as a family duty in such instances. Besides, Aunt Alice or Cousin Herbert will probably be happier away from the hospital.

STEPS FOR DOCTORS TO TAKE

Physicians probably can do most to prevent overutilization of health care, since they provide medical service, order ancillary services and decide when patients shall enter and leave the hospital. The notion that doctors charge higher fees for the care of patients who have insurance is a mistaken one, but it is possible that some of them may feel at greater liberty to employ laboratory procedures which they might otherwise have dispensed with, or to prolong hospitalizations occasionally in such cases.

No one has the temerity to impose restrictions upon physicians, for every one of them is intent upon providing each of his patients the kinds and amounts of care that he thinks are needed. Every doctor, therefore, must keep constantly in mind that truly nonessential work and materials exert upward pressure upon insurance-premium structures, and thus are inimical both to his individual patients and to the public at large!

At the suggestion of the American Medical Association and the Iowa Medical Society, several years ago, the doctors who compose medical staffs set up "tissue committees" at most of the hospitals in the state. These groups check upon the quality of surgery performed at the respective institutions, and also help to curb overutilization of health insurance by prompting surgeons to make sure that all their operations are essential ones.

More recently, the two organizations have urged the establishment of "utilization committees" to check upon the services that have been ordered for patients with identical ailments, and upon the lengths of time they have been kept in the hospital. The tables that utilization committees compile should have three excellent uses. They should focus attention upon extraordinarily effective treatment technics; they should point up instances where additional tests perhaps should have been made, or additional or different medications administered; but most of all, they should bring to notice the patients who may have received more than they needed of one thing or another, or may have been kept in the hospital longer than necessary.

SUMMARY

Health-care overutilization is a problem that demands attention from the groups that sell health insurance, from the groups that purchase it, from the families that use it, and from the physicians who either provide or order the services and commodities which it finances. Health insurance can continue to serve Americans adequately, provided that it is not abused, and it is everyone's responsibility to keep it from being mistreated.

Woman's Auxiliary News

"Let's Grow Up"

In her inaugural address at the 41st Annual Convention, in San Francisco, Mrs. William H. Evans, Youngstown, Ohio, the 1964-65 president, urged the Auxiliary to "stop being a women's club" and to work for a better world through better health.

For 42 years, Auxiliary members have taken the lead in making their own communities better places in which to live, she declared. They have recognized that, as Disraeli stated it, "The health of the people is really the foundation upon which all their happiness and all their powers as a State depend." By pinpointing health problems and working out solutions for them, Auxiliary members have been good citizens of their towns and states. Now, the time has come when they must also be good citizens of the world, accepting some of the responsibilities of international leadership. "Let us share our knowledge," Mrs. Evans implored. "Let us so perform our tasks at home that our service will be a guide for other nations. Let us this year strive for 'Better Health—Better World.' "

We have a strong foundation of past accomplishments upon which to build this better world. We shall continue the vital programs through which we now serve our communities, but we must constantly look for ways to improve them, to keep them timely and to make them a source of interest for each doctor's wife. Even as we do this, however, we must broaden our sphere of influence by seeking new projects. All of our programs are important, for each reflects a well-defined need, but before adopting the entire plan for 1964-65, let us look at each segment objectively. You should ask yourselves whether this particular project or that special campaign is suitable for your community? Does your Auxiliary have the manpower, the talent and the will to do the job well? Remember . . . one program, carefully planned, eagerly evolved and satisfactorily completed, speaks with far more authority than 10 half-hearted efforts. Bear in mind William McFee's thought: "The world belongs to the enthusiast who keeps cool."

We have grown in size, now let's *grow up!*

CONGRATULATIONS

from the IMS Woman's Auxiliary to Donovan F. Ward, M.D., new president-elect of the American Medical Association.

The Cry for Help

Suicide is neither a pretty nor a popular topic. It *is* being recognized as a major medical problem, however, ranking among the first 10 causes of adult deaths in the United States. It has been estimated that almost as many people die by their own hands as die from tuberculosis and leukemia combined.

A continuing program of the Woman's Auxiliary is to provide information on suicide-prevention to law-enforcement agencies and other interested groups. This Suicide Prevention Program was started in 1963, with the approval of the AMA Council on Mental Health, and has been developed under the direction of Mrs. Robert Garrard, chairman of the Committee on Mental Health of the national Auxiliary.

The program base is a dramatic 16 mm. film, "The Cry for Help," which was prepared specifically for police officers. It deals with the handling of the depressed, suicidal person, and is the second in a film series intended to acquaint the police with better ways of handling mentally ill persons. The film runs 33 minutes, and a discussion guide accompanies each print. A review of it in the May 25 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION said: "A real try is made to give the police officer a feeling for the suffering undergone by an individual before he attempts suicide. . . . The film is highly recommended."

How can "The Cry for Help" be used by county Auxiliaries? Primarily by offering it to local law-enforcement personnel. Careful planning is a prerequisite to such an undertaking. Two initial steps are suggested (1) an advance screening of the film by Auxiliary and medical society representatives (2) a tactful approach to the police chief, calling attention to this new and effective training aid. "The Cry for Help" may be borrowed, for postage costs only, by writing the Iowa Association for Mental Health, 306 Flynn Building, Des Moines 50309. Also available is a manual for police officers, "How to Recognize and Handle Abnormal People" (60c per copy).

The film is best followed by a panel discussion, and the recommended panel would include a physician (preferably a psychiatrist), the medical examiner, a police chief or sheriff, and a lawyer or social worker.

An Auxiliary may organize a program for police officers and follow it with an additional screening and panel discussion for community leaders. The Suicide Prevention Program is *not* intended for the general public, but it may be presented effectively

on an invitation-only basis, to representatives of groups such as the ministerial association, bar association, school officers, court and probation officials, welfare department, rescue squad, nurses' association, etc.

In the May issue of TODAY'S HEALTH, Mrs. Garrard commented on the program as it was presented in her hometown of Greensboro, N. C.: "We found that the police department and the medical profession can work well together, sharing a genuine concern for troubled people, and that many individuals and agencies are involved with the problem of suicide. Perhaps the most gratifying lesson was that a program of this type can be presented as a public service, with no sensational overtones."

Auxiliaries considering this program will find that a helpful adjunct is the pamphlet. "Facts about Suicide," available at 10c per copy from the U. S. Govt. Printing Office, Washington 25, D. C.

—MRS. B. R. GOLDMAN, Chairman
Committee on Mental Health

Helping Others: Handicapped Craft Sales

One of the largest projects of the Woman's Auxiliary to the Iowa Medical Society has been the sponsorship and promotion of the sale of articles made by handicapped persons throughout the State of Iowa, in conjunction with the Iowa Society for Crippled Children and Adults, Inc. (the Easter Seal Society). This seems a most appropriate time to take a look at our past achievements, to evaluate our accomplishments and to peer into the future needs.

The Polk County Auxiliary was the first group to undertake this project. Its first sale was held in the spring of 1948. On July 15, 1949, the State Auxiliary's Board accepted handicapped craft sales as a state project, and appointed Mrs. J. E. Whitmire, of Sumner, to serve as chairman of the committee then called "Work for the Handicapped." In September, 1949, the needs of the handicapped were the incentive for Polk County Auxiliary to sponsor a fashion show, and with the profit of $1,275.00, therapy equipment for the Iowa Rehabilitation Center, then located at 2917 Grand Avenue, Des Moines, was purchased.

The Dubuque County and Woodbury County Auxiliaries sponsored their first sales in the fall of 1949, and the Black Hawk County Auxiliary followed with a sale in the spring of 1950. The Webster County Auxiliary had its first sale in 1951, and the Des Moines County Auxiliary sponsored its first one in 1954. The Clay County Auxiliary sponsored a sale of articles made by the handicapped of Clay County only in 1954, but in 1955 the county Auxiliaries of District III, working together, sponsored a sale at the Clay County Fair. That sale was so successful that repetitions of it have been conducted each year, at the time of the county fair, and that event has become the largest of all. Jefferson County Auxiliary sponsored its first sale just this spring, 1964. Through the years, the total proceeds throughout the state have ranged from $3,000.00 to over $4,500.00. The Easter Seal Society of Iowa, in thanking us for this year's assistance, expressed the hope that more sales could be established in the future.

Members of each county Auxiliary sponsoring a sale handle the publicity and act as salesladies. The entire price of each article is returned to the handicapped person who made the article. In the beginning, members of the Auxiliary also priced the various articles submitted.

Several problems were encountered at the beginning of the Auxiliary's sponsorship, in that some articles were made of inferior material or with poor color combinations, and other articles were unsalable for different reasons. Obtaining money to finance the purchase of quality materials was a problem for the low-income and homebound handicapped. With a little guidance from both the Auxiliary and the Iowa Society for Crippled Children and Adults, the quality of materials used and the color combinations have greatly improved. Throughout the years, the workmanship has been excellent. The Iowa Society for Crippled Children and Adults has been most cooperative, and the two organizations have been mutually satisfied with these projects to help rehabilitate the handicapped.

Today, we are faced with new challenges in furthering new opportunities in helping the handicapped of Iowa to become more self-sustaining. It has been suggested that each Auxiliary conduct a survey in its community to find out who needs the service and to urge them to participate in the program of the Easter Seal Society. It is impossible for that organization to know of every handicapped person in the state, and here the Auxiliary could be of prime importance.

Although our sales have been highly successful each year, more articles are needed for these sales, and perhaps we, as doctors' wives, could individually accept this challenge by helping people in our own communities to obtain materials on which to work.

Looking to the future, it is hoped that a mobile occupational-therapy unit can be purchased, to travel from town to town promoting rehabilitation for the handicapped by displaying articles, showing a handicapped making articles, and teaching handicapped persons how to use their abilities.

Also, plans are being made for a more comprehensive craft program for homebound handicapped adults. The Iowa Society for Crippled Children and Adults hopes to have a training period at Camp Sunnyside, located near Des Moines. The training period would last from six to eight weeks, and even in that short period of accelerated learning, a handicapped person could learn to utilize his or

her physical capacities. This should give quite an impetus to our sales.

May this synopsis of the history of this project stimulate every doctor's wife to take a personal interest in the handicapped person in her own area, thus enlarging the scope of services extended by both organizations. Should you want to sponsor a sale in your community, simply contact either your State Chairman of Community Services or write direct to the Iowa Easter Seal Society, Box 911, Des Moines.

You will enjoy helping the handicapped!

—MRS. N. W. IRVING, JR., Chairman
Community Services
MRS. H. C. MERILLAT, Co-Chairman

We Were There

Your Auxiliary was represented by one or more officers at the following meetings:

May—1964

IMS Senior Medical Day, at Iowa City—Talk on the Auxiliary given by Mrs. Howard Ellis.

Woman's Auxiliary to the Iowa Dental Association —Attended by Mrs. Howard Ellis.

Iowa Interprofessional Association Conference on Medical Quackery—Attended by Mrs. Howard Ellis, Mrs. Noble Irving and Mrs. S. P. Leinbach.

IMS Board of Trustees—Report of IMS Auxiliary programs and plans for 1964-1965 given by Mrs. Howard Ellis.

June—1964

AMA Convention—Forty-first Annual Convention of the Woman's Auxiliary to the AMA at San Francisco. Delegates from Iowa were: Mrs. Howard Ellis, Mrs. Henry Boe, Mrs. Frank Ober, Mrs. O. D. Wolfe, Mrs. H. A. Weis. Memorial Service at the Auxiliary AMA Convention was presented by Mrs. Howard Ellis.

Iowa Farm Bureau, Woman's Division—Attended by Mrs. R. E. Hines.

Iowa School Public Relations Workshop at Cedar Falls—Attended by Mrs. D. H. Penly.

July—1964

16th Annual Health Education Workshop at Ames (2 days)—Attended by Mrs. Howard Ellis, Mrs. S. P. Leinbach and Mrs. Noble Irving. Presiding at the Thursday Workshop Session, Mrs. Ellis.

Comprehensive Mental Health Centers, Planning and Discussion at Mason City—Attended by Mrs. B. R. Goldman.

Comprehensive reports of the meetings are on file at the IMS office and are available to Auxiliary members upon request.

COUNTY AUXILIARIES

Black Hawk

Black Hawk County Medical Auxiliary held its May meeting in the home of Mrs. Thomas L. Trunnell, for installation of officers.

Mrs. Eugene Goldberg succeeded Mrs. Lewis Zager as president. Other officers installed included Mesdames Robert Buckles, president-elect; Arthur Woodward, first vice-president; Albert Dolan, second vice-president; Thomas Bairnson, of Cedar Falls, secretary; Craig Ellyson, corresponding secretary; and Robert Morrison, treasurer.

Mrs. John Kestel presented a program on flower arranging.

Marion

The Marion County Medical Auxiliary held its final business meeting of the season on May 5, at a luncheon in the home of Mrs. Charles Green, with Mrs. A. P. Smith serving as co-hostess.

New officers for 1964-1965 were installed: Mrs. Yme Sloterdyk, president; Mrs. R. R. McClung, vice-president; Mrs. A. P. Smith, treasurer; Mrs. C. D. Winder, secretary; Mrs. C. J. Green, corresponding secretary and Mrs. E. J. McKeever, parliamentarian.

Mrs. McClung presented the past president's medallion to Mrs. T. D. Clark, the retiring president.

On May 26, the Auxiliary met for lunch at the Knoxville Country Club. Mrs. A. N. Schanche, a former member of the Marion County Auxiliary was present. The occasion was a surprise baby shower for Mrs. McClung, the guest of honor. Dr. and Mrs. McClung have since become the parents of a son, Timothy Michael, born June 6 at Collins Memorial Hospital.

Mrs. Sloterdyk and Mrs. Clark visited the residents at the Marion County Home on June 10. Mrs. Joe Buffo and daughter Janet provided the program of accordion music and dance routines.

Woodbury

The Sioux Med Dames (Woodbury Auxiliary) recently held their handicapped craft sale, and netted $850.50, which amount is returned to the handicapped individuals through the Iowa Society for Crippled Children and Adults, Inc. Mrs. P. J. Monnig is county chairman of Handicraft Sales.

As an Auxiliary, the Sioux Med Dames approved the increase in national dues, which will permit the mailing of the BULLETIN to all Auxiliary members.

Highlights From the AMA Auxiliary Convention

Convention items of interest to Iowa Auxiliary members include:

Amendment of the By-Laws to raise national dues to $2.00 a year, to cover expanded programs and communications between national and state and county levels.

Presentation of $307,318.14, the Auxiliary's 1963-64 contribution to the American Medical Association Education and Research Foundation.

A homemaker-service session featuring "To Temper the Wind," an orginal production by Plays for Living, and a discussion on the establishment and operation of a homemaker service.

Amendment of the By-Laws to change the name of the Civil Defense Committee to Disaster Preparedness Committee.

Presentation of the AMA memorial service was made by our state president, Mrs. Howard G. Ellis.

Auxiliary officers were challenged to present programs designed to INTEREST the Auxiliary member, to INFORM the Auxiliary member, and to INSPIRE the Auxiliary member, so that she will be prepared to assume her rightful place as a leader in an effort to promote "Better Health—Better World."

National Auxiliary Has Colorful New Bulletin

All 85,000 members of the Woman's Auxiliary to the American Medical Association received copies of the attractive May BULLETIN, a publication designed to acquaint them with the full scope of Auxiliary activities.

The publication is the redesigned national BULLETIN of the Woman's Auxiliary which for the first time is being sent to all Auxiliary members. Formerly, it was circulated only to the 12,000 members who had sent the $1.00 subscription price.

The magazine is issued quarterly, and presents information on socio-economic issues affecting medicine, stories of Auxiliary community service activities, human interest features, and material helpful in the everyday life of physicians' families.

Regular features will be "County Communique," a roundup of local Auxiliary news, and "In the Public Eye," which will emphasize achievements of doctors' wives in community activities.

The lead article in the May issue, "Homemaker Service—Just What the Doctor Ordered," describes how the Auxiliary has been active in the establishment and expansion of home care service.

Other features are "How to Doctor Your Doctor"; a story about San Francisco, the AMA's convention city this year; a presentation of the 1964-65 program of the National Auxiliary's president-elect, Mrs. William H. Evans, Youngstown, Ohio; and a résumé of President Johnson's medical legislative proposals.

The first issue of the magazine in its new format was published in March and was circulated to the paid subscribers to the old BULLETIN.

Delegates to the National convention of the Woman's Auxiliary will be asked to approve a one-dollar increase in National dues to be used in providing each Auxiliary member with a subscription to the BULLETIN. At our annual meeting in April, Iowa's delegates to the National convention were instructed to vote in favor of this proposal.

Diminishing Hazards of Surgery

A report from one large center on mortality in more than 9,000 major operations on the digestive and urogenital tracts showed a decrease of 60 per cent between the periods of 1930-1943, and 1944-1957. During the final five years of the latter span, the surgical mortality rate was consistently below one per cent.

In another study, the surgical mortality in cases of duodenal ulcer was shown to have been reduced by more than half in a single decade, to a level of about one per cent. Other centers report a reduction of one-half in operative mortalities in pulmonary resections between 1945-1950, and 1951-1955. Most of these operations were for tuberculosis, but an appreciable number were for bronchiectasis and lung cancer.

Even in neurosurgery, significant improvement has been made, particularly in the last decade. One center recently reported only three operative deaths in 100 consecutive patients operated on for the removal of brain tumors.

A variety of factors are responsible for these improvements. Surgeons are better trained, and make earlier accurate diagnoses—this is the principal factor. Advances in anesthesiology play a very important role. The use of recovery rooms and meticulous preoperative and postoperative care have been important. Some others are the greater use of intravenous fluids, the use of antibiotics and timely blood replacement.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 50312

President-Elect—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

Recording Secretary—Mrs. M. E. Olsen, Minden 51553

Corresponding Secretary—Mrs. C. W. Latchem, 942 56th Street, Des Moines 50312

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Throckmorton, 1201 64th Street, Des Moines 50311

Associate Editor—Mrs. J. G. Thomsen, 207 Glenview Drive, Des Moines 50312



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How to prescribe Valium (diazepam)

Indications: Valium (diazepam) is of use in dealing with anxiety reactions stemming from stressful circumstances or whenever somatic complaints are concomitants of emotional factors. It is useful in psychoneurotic states manifested by anxiety, tension, fear and fatigue. Valium (diazepam) may also be useful in acute agitation due to alcohol withdrawal. Valium (diazepam) may be of use to alleviate muscle spasm associated with cerebral palsy and athetosis.

Dosage and administration	*Usual daily dose*
Mild to moderate psychoneurotic reactions: Manifested by anxiety-tension alone or with depressive symptomatology, agitation, restlessness, psychophysiological disturbances	2 mg to 5 mg, 2 or 3 times daily
Severe psychoneurotic reactions: Where severe anxiety, fear, agitation, aggression or hostility exist alone or with depressive symptoms	5 mg to 10 mg, 3 or 4 times daily
Alcoholism: As an aid in symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis	10 mg, 3 or 4 times during the first 24 hours; reducing to 5 mg, 3 or 4 times daily as needed
Muscle spasm associated with cerebral palsy or athetosis	2 mg to 10 mg, 3 or 4 times daily

Contraindications: Valium (diazepam) is contraindicated in infants, patients with a history of convulsive disorders or patients with a history of glaucoma.

Warning: Valium (diazepam) is not of value in dealing with psychotic patients manifesting anxiety and should be avoided when there is reason to believe the patient is psychotic.

Precautions: In elderly or debilitated patients, it is important to limit the dosage to the smallest effective amount to preclude the development of ataxia or oversedation (not more than 1 mg, 1 or 2 times daily initially, to be increased gradually as needed and tolerated). As is true of all CNS-acting drugs, until the correct maintenance dosage is established, patients receiving Valium (diazepam) should be advised against possibly hazardous procedures requiring complete mental alertness or physical coordination. Drivin automobile during the period of Valium (diazepam) therapy is not re mended. In general, the concurrent administration of Valium (diazepam, other psychotropic agents is not recommended. If such combination the is used, careful consideration should be given to the pharmacology of agents to be employed with Valium (diazepam) — particularly with kn compounds which may potentiate the action of Valium (diazepam), as phenothiazines, barbiturates, MAO inhibitors and other antidepress

Since Valium (diazepam) has a central nervous system depressant e patients should be advised against the simultaneous ingestion of alcohol other central nervous system depressant drugs during Valium (diaze therapy. Safe use of Valium (diazepam) during pregnancy has not established. The usual precautions are indicated when Valium (diazepa used in the treatment of anxiety states where there is any evidence of pending depression; particularly the recognition that suicidal tendencies be present and protective measures may be necessary. The usual precau in treating patients with impaired renal or hepatic function should be served.

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SYMPOSIUM ON ANEMIA at the MERCY HOSPITAL (DES MOINES) MEDICAL DAY

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- "Autoimmune Hemolytic Anemias" Israel Davidsohn, M.D., page 512
- "Hypersplenism and Its Relations to Humoral Factors" Bohdan J. Koszewski, M.D., page 516
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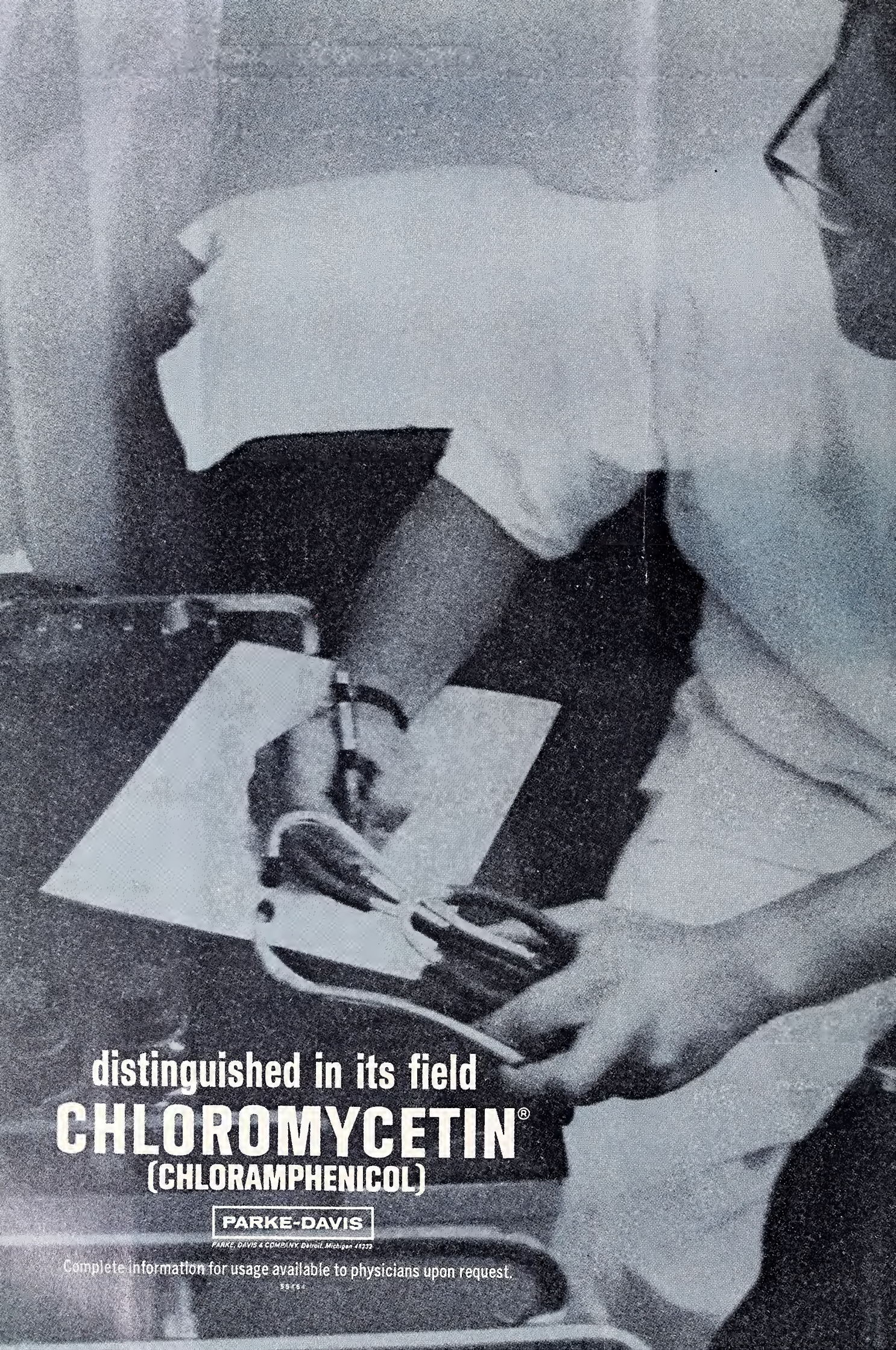
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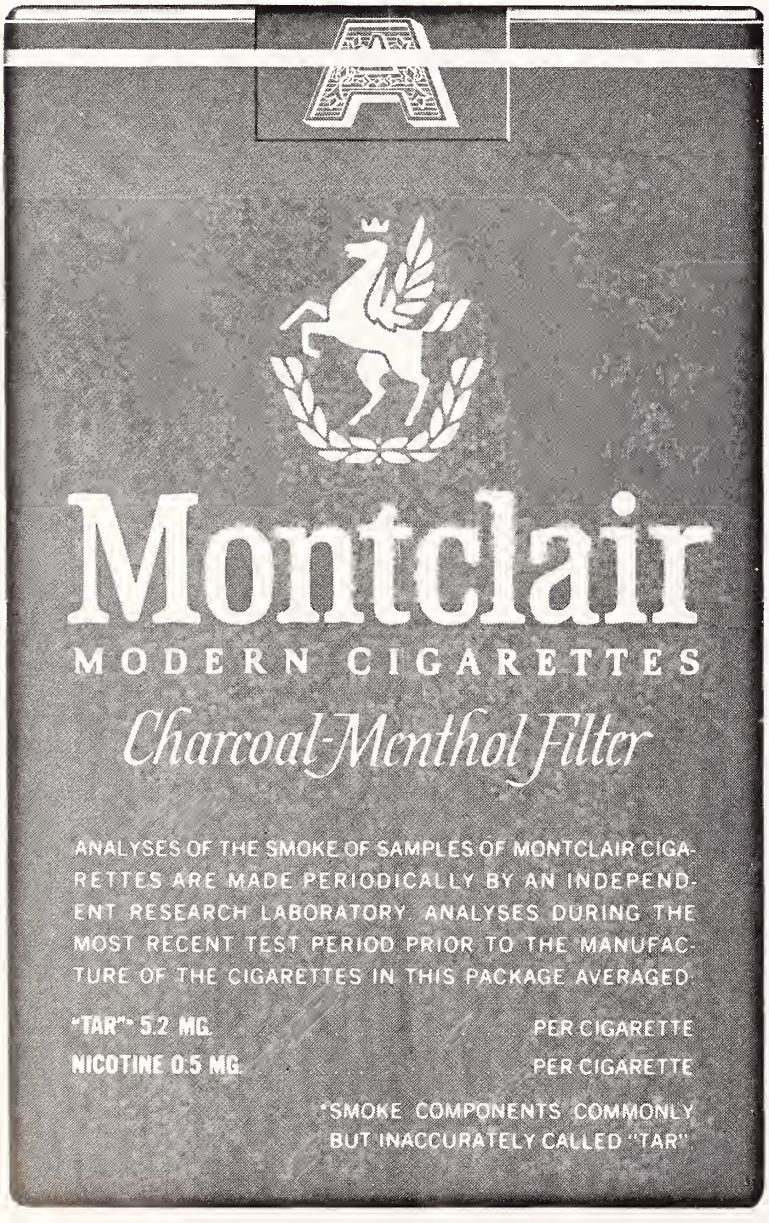
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Scientific Articles

Anemia: The Masquerader

DONAL DUNPHY, M.D.
Iowa City

WEBSTER'S DEFINES MASQUERADE as an action, appearance or bearing that is a mere outward show, concealing the true character or situation. "Anemia," as a diagnosis, conforms well to this definition. It is the mere outward show concealing the true character or definitive diagnosis.

We are all prone at one time or another to be misled and to accept anemia as a diagnostic entity. It is not uncommon for us to hear it stated that "a diagnosis of anemia was made and a therapeutic program was initiated." Anemia is not the name of a diagnostic entity. It is a descriptive term, useful in clinical medicine, that refers to a reduction in the amount of circulating hemoglobin, the volume of packed erythrocytes per 100 ml. of blood and the number of red cells per cubic millimeter.

It is a term that is employed to describe a less than normal state of these values in a patient or in a group of patients. These values—hemoglobin, erythrocyte count and hematocrit—are the result of a dynamic process of production and destruction. It is a process that is subject to many adverse influences and is altered in a variety of pathologic entities.

The dynamic process of erythrocyte production is schematically portrayed in Figure 1. The dependence of adequate production upon supplies of essential materials such as iron, B_{12}, possibly copper, etc. is indicated. The interplay of adequate production versus destruction is depicted, as are the effect of acute blood loss, the role of noxious agents, inborn errors of metabolism and other factors that may help to produce the clinical picture of anemia.

There is no completely satisfactory classification of anemia, partly because of the great variety of factors which may produce anemia. A series of selected cases with anemia as one of the presenting symptoms, if not the major complaint, will illustrate the diversity of causative factors as well as the ability of anemia to mask the true character of the problem the physician must deal with.

CASE REPORTS

Case 1. D. M. B., a white female, was two years old when she was admitted to the University Hos-

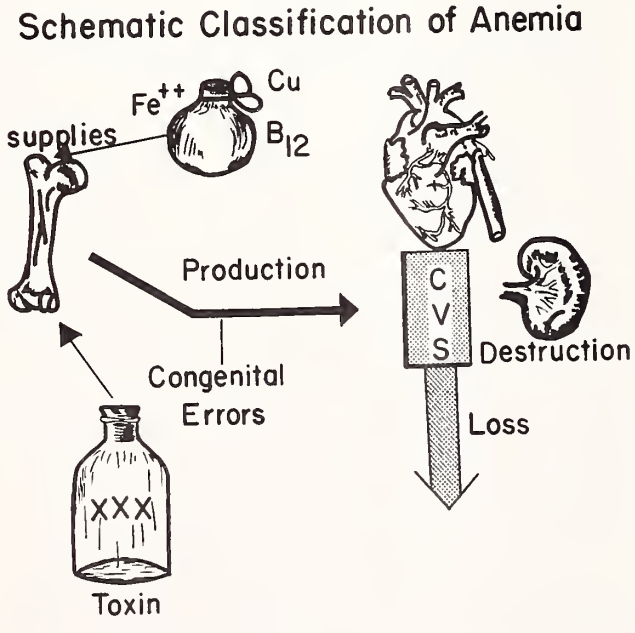


Figure 1

Dr. Dunphy, the head of pediatrics at the SUI College of Medicine, made this presentation in Des Moines, on October 26, 1963, at Mercy Hospital Medical Day.

pitals for the first time. The following history was obtained: At 20 months of age she had developed a virus infection characterized by intermittent fever, rhinorrhea and apparently generalized malaise. She would gradually improve and then experience a recurrence. The family had also noted intermittent jaundice. This was not clearly associated with infection, but it was their impression that the jaundice was more prominent at such times.

The prenatal and early postnatal history was of considerable interest. The mother had been transfused for severe anemia late in the course of her previous pregnancy, and had required three units of blood before a satisfactory hematocrit level was reached. Approximately three months later—early in the first trimester of the patient's gestation—the mother had become markedly jaundiced and weak, and had not regained a state of good general health until after delivery. The delivery had been uncomplicated, and the patient was a full-term infant both by weight and by calculated gestation. She had developed jaundice in the first few days of life, and had been icteric at the time of discharge from the hospital at 14 days of age. The jaundice had gradually cleared, but the previously described problem of intermittent episodes of jaundice had begun.

The infant had been hospitalized some 50 days prior to her referral to the University Hospitals. Examination had revealed splenomegaly, anemia and equivocal jaundice. She had been treated with oral iron, intramuscular iron, and parenteral liver. The initial hemoglobin had been 7.6 Gm. The patient's failure to respond to therapy directed at correction of her aneima led to her referral for further study.

The family history obtained at the time of her hospitalization was extremely interesting. The paternal history was negative, but a number of individuals on the maternal side had histories of anemia and jaundice (Figure 2).

Laboratory studies for erythrocyte fragility were carried out, since congenital spherocytosis appeared to be the most likely possibility. This diagnosis was indeed substantiated by the erythrocyte fragility test. Surprisingly, however, the mother gave no evidence of the condition but the father's erythrocyte fragility test was abnormal. The maternal and paternal grandmothers were also studied. The data for the patient, parents, and grandmothers are presented in Table 1.

TABLE 1
HEMOLYSIS

Red Cell	Initial	Complete
D. M. B.	0.52	0.32
Sibling	0.64	0.28
Mother	0.42	0.24
Father	0.64	0.28
Mat. G. M.	0.44	0.28
Pat. G. M.	0.64	0.32
Control	0.42	0.24

This new information led to the obtaining of a detailed history on the paternal side of the family from the child's paternal grandmother. This is presented in Figure 3. The evidence clearly shows that this disease, congenital spherocytosis, came from the paternal side.

Case 2. The next case illustrates the masking ability of anemia exceedingly well. It is that of a 15-year-old boy, one of many children whose parents were migrant workers. The family had come originally from West Virginia, but for the past several years had been crop pickers throughout western New York, and had migrated South in the winter months for the Southern harvests. Consequently, the family members had received little or no medical care, and the children had had a minimum of schooling.

The patient had not felt well for some time, and had not been able to work with any degree of regularity. This situation had precipitated much fam-

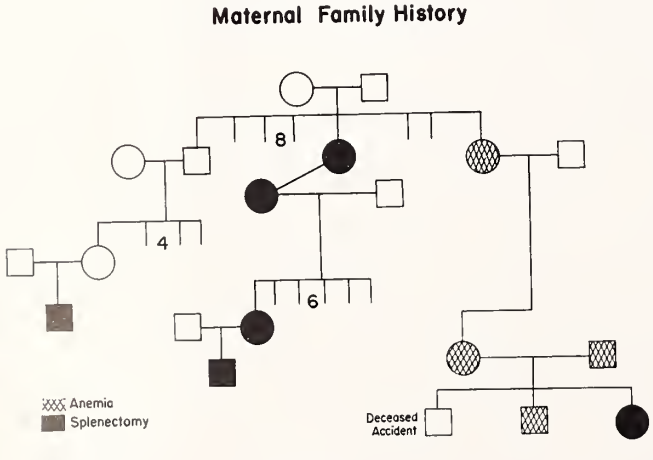


Figure 2

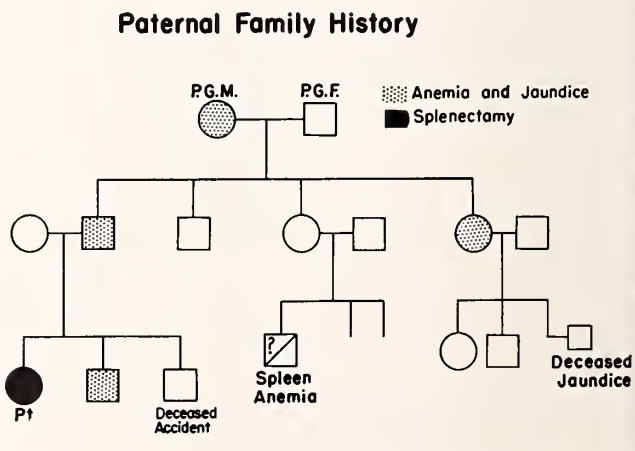


Figure 3

ily strife, and in consequence he had run away for brief periods on several occasions. Because of the persistence of his "laziness" and because the family had finally recognized his pallor, he had been taken to a physician, and the doctor had discovered a severe degree of anemia. Therapy with iron and liver was initiated, but no improvement was noted, and in fact the boy became gradually worse. He was referred with a tentative diagnosis of severe anemia and possible leukemia.

Table 2 contains some of the pertinent information that was obtained on admission. There was clear evidence of a profound hematologic disturbance, with a hemoglobin concentration of 3.8 Gm. and a hematocrit of 12, to say nothing of the evidence of bleeding. There was evidence that this process, whatever it may have been, had been active for a long period of time, inasmuch as his weight on admission was only 57 lbs., compared to the average of 120 lbs. for boys of his age. His height, though not listed in the table, was in keeping with his weight.

The diagnosis of this boy's underlying disease becomes clear when one studies the laboratory data listed in Table 3. Subsequent studies established the diagnosis of severe pyelonephritis secondary to a congenital abnormality of the bladder neck, with hydroureters and hydronephrosis. His hematologic findings were the results of long-standing kidney disease.

TABLE 2
FINDINGS IN CASE 2

Age 15 yrs.	Wt. 57 lbs./120
Bld Pr. 124/88	Hgb 3.8 Hct 12
Acutely ill—pale—dyspneic	
Ecchymotic—areas—Gingival Bleeding	
Palpable Spleen	

TABLE 3
FURTHER FINDINGS IN CASE 2

BUN 205	pH 7.25
CO_2 10.	Ca 5.8 P 10
Urine— Alb 3+ Sp. Gr. 1.010	
Culture: E Coli ++++	
W.B.C. 800/ml	

Case 3. Renal disease presenting as anemia is not a rare pathologic condition. Another example is the case of N. J. A., a 14-year-old white female, who had apparently been well until the age of 11 years, when she had developed a mild case of impetigo. Her mother had treated it initially with local therapy and with apparent success. Shortly afterwards, the patient developed measles without complications but with an associated reappearance of impetigo. The impetigo at that time was much more severe, and medical advice was sought. The diagnosis of pyodermatitis was made, and local and oral therapies were commenced. The pyodermatitis improved, but then recurred. This sequence of events—namely a response to therapy followed by the reappearance of pyodermatitis—occurred several times. In view of the unsatisfactory response, a blood count was obtained and a hemoglobin of 8.1 Gm. was found. Iron therapy was initiated, but it failed to produce a satisfactory response, and the patient was referred for studies.

Initial urinalysis was grossly abnormal, with albumin 3+, pH 5, specific gravity 1.010, and cellular elements including red blood cells. Further studies disclosed a blood urea nitrogen of 260 mg. per cent and evidence of renal acidosis. This child's progressive downhill course terminated in death approximately two months after the recognition of her basic illness, namely chronic glomerulonephritis.

Case 4. N. S., a 6½-year-old white male, had been in excellent health until 10 days prior to his admission to the University Hospitals. He was an only child, the result of a normal gestation. Delivery had been by means of a breech extraction. There had been no problems in the neonatal period. He had grown and developed well. Ten days prior to his admission, he had become feverish and irritable, and his oral temperature had been found to be 101° F. His mother had given him some salicylate and had encouraged fluids. His temperature had promptly fallen to 99° F., and he had appeared comfortable. That evening he had again become feverish. He had perspired profusely, commenced coughing, and developed dyspnea and some stridor. These symptoms had progressed throughout the evening, and the family physician had been called. The patient had been hospitalized in his own community with a tentative diagnosis of "croup."

On admission at that institution, he had been moderately anemic, with a hemoglobin of 9 Gm. A chest x-ray had been taken (Figure 4), and physical examination had revealed a small cluster of lymph nodes in the supraclavicular area. From a biopsy of these nodes, a diagnosis of Hodgkin's disease had been made.

The patient was referred to the University Hospitals. Radiation therapy for the mediastinal mass was initiated after confirmation of the diagnosis. The results of therapy can be seen in Figure 5.

It is not inconceivable that the diagnosis of this boy's condition could have been overlooked for a while, under the guise of "infectious croup" with iron-deficiency anemia, had the family physician not been thorough in his approach to the problem.

Case 5. J. R., a four-month-old white female, was admitted to University Hospitals on August 7, 1958. The infant had been born at University Hospitals on March 30, 1958, and at birth had weighed 3.6 Kg. She had been breast fed and had gained

weight normally during the first three months. During the month before admission, the mother had noted that the infant was pale.

One week before admission, the infant had begun to wake up at night to nurse, and her skin had felt hot. Frequent coughing, followed by vomiting, had been observed. The infant had been admitted to the local hospital, where a daily fever as high as 40° C. had continued for five days, in spite of therapy with penicillin and oxytetracycline.

Physical findings. At the time of her admission to University Hospitals, the infant appeared pale but well nourished. The rectal temperature was 38.8° C., and the pulse rate was 180/min. A few petechiae were noted on the chest. On auscultation, the lungs were clear. The abdomen was enlarged. The spleen and liver were palpable 5 cm. below the costal margins in the midclavicular lines. The remainder of the physical examination was not contributory.

Laboratory findings. The concentration of hemoglobin was 5.9 Gm./100 ml., and the leukocyte count was 4,100/cu. mm., and the platelet count was 32,000/cu. mm. The diagnosis entertained at the time of this patient's admission was that of acute leukemia. A bone-marrow aspiration was carried out, and the specimen obtained showed erythroid hyperplasia and only a few platelets, and numerous monocytes containing small, oval yeast-like cells. The diagnosis of histoplasmosis was established by cultures of the bone marrow and peripheral blood. The infant was successfully treated with amphotericin B. This case has been reported in detail by Moffet, *et al.*[1] This is another example of the diverse etiologic factors that may be found in the production of severe anemia.

Case 6. Another instance in which anemia presented as one of the major manifestations of a serious disease is the case of D. A., a six-year-old white male. The chief complaint at the time of his referral was increasing pallor of a year's duration. D. A. had been the product of an uneventful pregnancy, except for hyperemesis. His birth weight had been 7 lbs. and a few ounces. Throughout his life he had lagged considerably in his growth, although his development had been normal. His family had not been concerned about his small stature until he commenced school at 5 years of age, when his retardation in height and weight, compared to other children, had been pointed out to them by the school authorities. The family physician had then found a rather severe degree of anemia, and also had made a diagnosis of rickets. Therapy with calcium, vitamin D and iron was begun, but the patient continued to become increasingly anemic and was referred for studies. There was no history of any urinary tract diseases or gastrointestinal difficulties.

At the time of hospitalization the patient weighed 28¾ lbs. and was 35½ inches tall. There was evidence of ricketic changes on physical examination, with moderate widening of the epiphyses of both hands and feet. He walked with a waddling gait. There was a yellowish-orange cast to his skin. The abdomen was protuberant. The liver and spleen were both enlarged. There was evidence of pitting edema of the lower extremities. The hematologic data are presented in Table 4.

Further studies established the fact that this child was suffering from Fanconi's syndrome, or more specifically cystinosis, with a deposition of cystine in the body tissues, advanced renal dam-

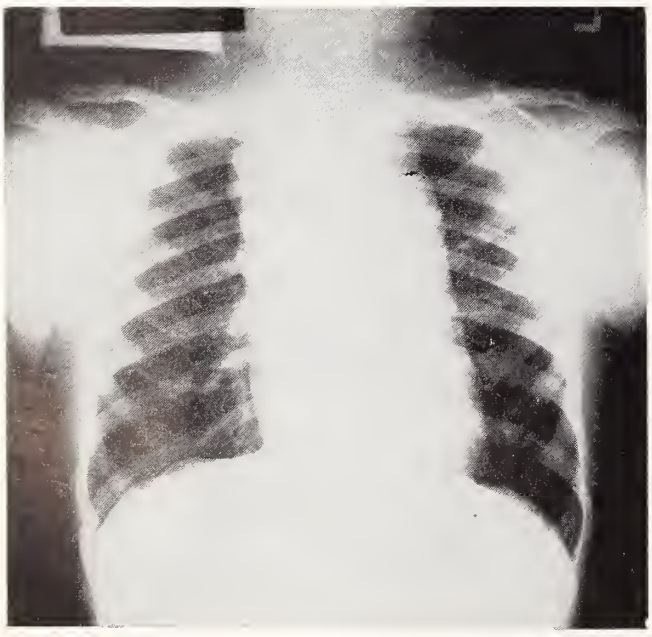


Figure 4. Marked Mediastinal Node Enlargement

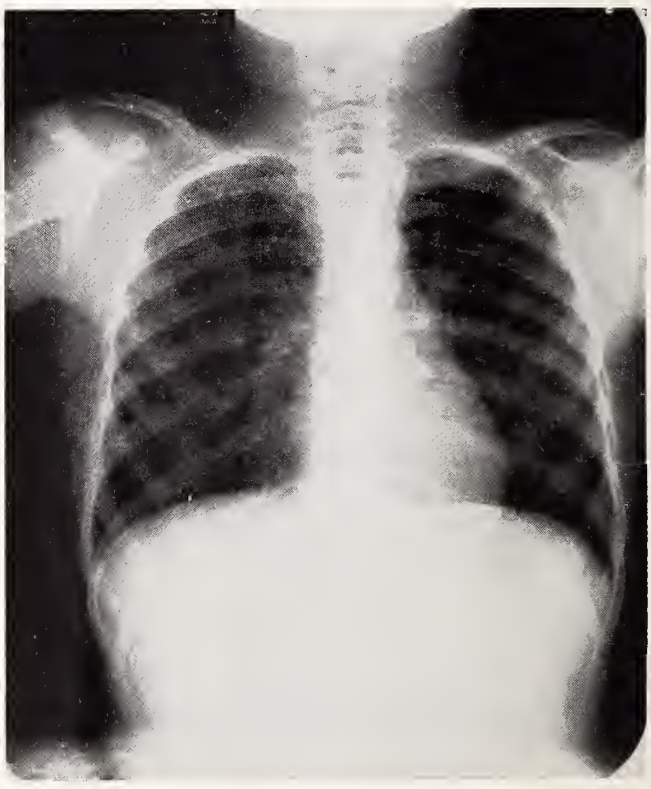


Figure 5. Response to Radiation

TABLE 4
HEMATOLOGIC DATA-D.A.

Hgb.	WBC	Hct.	Retic.
6.0	4,550	19	1%

age and renal rickets. The family physician was inclined toward this diagnosis, for an older sibling had died from this disease several years prior to the patient's illness.

Case 7. The next case is that of S. E., a 12-year-old who apparently been in excellent health until one year prior to admission to the University Hospitals.

At the age of 11, during a piano lesson, she suddenly felt very weak and had apparently lost consciousness for a few seconds. During this episode she had been quite pale. There had been no nausea or vomiting, pain or dizziness, or any other symptoms that could be elicited. Her family physician had then found that she was quite anemic, and he had initiated iron therapy. This had been continued for approximately six weeks. She had then made a satisfactory recovery and was asymptomatic.

Six months prior to her admission, she had awakened at night feeling nauseated, and very shortly thereafter had vomited several times. The vomitus, copious in amount, had consisted of dark coffee-colored material, mixed with the contents of her previous evening's supper. She had been quite weak, but had had no accompanying distress such as abdominal pain, diarrhea, etc. Her family physician had again found anemia. Gastrointestinal x-rays failed to reveal any abnormality, and the possibility of a Henoch's purpura had been considered. She had improved on iron therapy, once again, and had been well until September, two months prior to admission. Then she awakened at night feeling nauseated, and almost immediately thereafter vomited a large amount of material containing blood. She was pale and weak, and was brought to the local hospital. On admission she was found to be extremely pale, and slightly obtunded. Her blood pressure was 78/42 mm. Hg, and her pulse rate was 120/min. Her chest was clear, her abdomen was non-tender, and her hemoglobin was 10 Gm. No stool was found on rectal examination. A diagnosis of possible upper-GI bleeding from an undetermined source was considered. The following day she passed three tarry stools, and continued to vomit. Her hemoglobin fell to 8 Gm. She was given 500 cc. of whole blood. She continued to pass tarry stools and then "bright red blood." Her hemoglobin continued to fall, reaching 7 Gm. She was again transfused with 2 pints of whole blood, and her hemoglobin rose, first to 10 Gm. and subsequently to 12 Gm. Repeated roentgenographic examinations failed to reveal any etiologic factor. Bone-marrow examination was considered to be within normal limits, with a slightly depressed platelet count. The prothrombin time was normal. Physical examination then showed that the spleen was palpable.

She was released from the hospital with the impression of a possible von Willebrand's disease, or possible submucosal hemangioma. No therapy was prescribed. She continued well until one month prior to her referral to the University Hospitals, when a similar episode occurred and she was hospitalized for a week. This episode was almost identical to the one just described, and again no etiologic factor was found. She was treated with transfusions and referred for further studies.

At the time of her admission at University Hospitals, there were several salient features. Her white blood cell count was 4,100/cu mm., with 71 per cent polymorphonuclear cells and a platelet count of 179,000. The red cell hematocrit was 28 and the hemoglobin was 8.8 Gm. The stools were intermittently positive for blood. Repeated white blood cell counts were all less than 3,000/cu mm., and the platelet counts were less than 300,000. The bone marrow was reported as normal. The combination of thrombocytopenia, neutropenia, anemia, a palpable spleen and a normal bone marrow was interpreted as indicating hypersplenism. This, coupled with the patient's gastrointestinal bleeding, led to intensive roentgenographic studies. After repeated films, esophageal varices were demonstrated. The findings were confirmed by esophagoscopy. A splenoportogram was also performed, and a grossly abnormal portal system demonstrated (Figure 6). A splenorenal shunt was performed, and a liver biopsy was obtained which proved to be normal.



Figure 6. Splenoportogram

This case indicates the complexity of the problem that may lie behind anemia, and the need for intensive diagnostic effort to clarify the etiology.

SUMMARY

A series of selected cases of diverse etiologic backgrounds have been presented to illustrate and to serve as a reminder of the variety of pathologic conditions that may produce anemia of a severe degree. The cases selected have included infectious agents, inborn errors of metabolism, acute blood loss and severe renal disease. Finally, the fact that anemia cannot be considered a diagnosis, but rather a manifestation of disease, has been emphasized.

REFERENCE

1. Moffet, H. L., Najjar, S., and Cramblett, H. G.: Successful therapy of disseminated histoplasmosis through use of amphotericin B. J. Iowa M. Soc., 49:625-631, (Oct.) 1959.

Autoimmune Hemolytic Anemias

ISRAEL DAVIDSOHN, M.D.
Chicago, Illinois

AUTOIMMUNE HEMOLYTIC anemias are characterized (1) by a decrease of the oxygen-carrying capacity of the erythrocytes, as are *all* anemias; (2) by a shortened survival of erythrocytes, as are all *hemolytic* anemias; (3) by an antigen-antibody reaction that is responsible for the shortened survival, as is the case in all *immune hemolytic* anemias; and (4) by the special nature of the immune reaction, namely that the antibody is produced in the host, that hence it is an autoantibody, and that it reacts with the host's own tissues and hence is an auto-antigen.

THE HISTORY OF AUTOIMMUNE HEMOLYTIC ANEMIAS

The best way to become acquainted with a subject is to know its history. This is particularly true of a disease of known origin.

The story of autoimmune hemolytic anemia is basically the story of autoantibodies. It began with an argument. Paul Ehrlich, the great German bacteriologist, immunologist, biochemist and chemotherapist (1854-1915), denied the existence of autoantibodies and coined the term "horror autotoxicus" to indicate that antibodies against a host's own tissues are incompatible with life. In 1904, Karl Landsteiner (1868-1943) demonstrated the presence of autoantibodies in paroxysmal cold hemoglobinuria.

The clinical picture of what we now call acquired hemolytic anemia was described for the first time in 1898. The history of our knowledge of autoantibodies and of autoimmune hemolytic anemias is to be found in several important publications,[1-6] all of which appeared during the two years 1908 and 1909. This active period was followed by about 30 years in which there were relatively few scientific contributions on the subject, but three exceptions —the more important of the publications that appeared between 1909 and 1938—are listed in the references at the end of this paper.[7-9]

Dameshek and Schwartz revived interest in this disease in 1938 through their fundamental investigations.[10-12] Then in 1945, Coombs *et al.* reported the important discovery that erythrocytes sensitized by "incomplete" forms of Rh iso-antibodies were agglutinated by antihuman globulin sera prepared by immunizing rabbits against human serum proteins.[13] Their technic, however, was practically identical with that which had been employed by Friedberger and Moreschi 37 or more years earlier.[14] In 1946, Boorman, Dodd and Loutit announced an application of Coombs' discovery to hemolytic anemia,[16] and in 1947, Morton and Pickles described a method capable of increasing the sensitivity of red cells.[17]

PROPERTIES OF AUTOANTIBODIES

After this historical review, we shall discuss some of the properties of autoantibodies in greater detail.

I. Importance of Temperature. The separation

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according to thermal reactivity is based upon the fact that the clinical manifestations, course, prognosis and therapy are totally different for the warm and for the cold autoantibody diseases.

Warm autoantibodies are most frequently incomplete antibodies, best demonstrable by the antiglobulin test or by agglutination of enzyme-treated red cells. The optimum reaction is at 37° C. Hemolysis in the test tube is rare. Warm autoantibodies are commoner than cold ones—three to four times as frequent.

Immune group-specific isoantibodies (anti-A, B and Rh) are also warm autoantibodies.

Cold autoantibodies, as a rule, are complete antibodies (agglutinins). They may react within a broad thermal range, but rarely reach 37° C. Immune cold autoantibodies have a wide thermal range and are pathogenically significant.

The prognosis as to survival is better in anemia of the cold autoimmune type. On the other hand, the possibility of cure is generally better in cases of the warm autoantibody type.

Cold autohemagglutinins are seen in various conditions such as liver diseases, pregnancy, hemolytic anemia, virus pneumonia and lymphomas.

The normal range of cold agglutinin titers is from less than 2:64, but only rarely higher than 1:16.

In disease, the titer may be extremely high, into the many thousands. With the high titers, there is also a wider thermal range, reacting up to 30° C. There have been occasional reports of cold autoantibodies reacting even at 37° C.

Cold hemolysins are frequent, especially when the serum is slightly acidified (pH between 6.5 and 7.0). As expected, complement is needed for the lysis. Erythrocytes of patients suffering from paroxysmal nocturnal hemoglobinuria are particularly sensitive to the action of cold hemolysins. The optimum temperature for lysis is 20° C. These so-called "monothermal" hemolysins that react at a single temperature level are different from "bithermal" hemolysins in paroxysmal cold hemoglobinuria.

II. The Antiglobulin Test. Great advances in the understanding of autoimmune hemolytic anemia have resulted from the introduction of the antiglobulin test. Also helpful has been the introduction of macromolecular mediums such as bovine albumin, acacia, polyvinyl pyrrolidine, etc.

A positive antiglobulin test (1) is the result of a reaction between antibody globulin which is deposited on the surface of the red cells and the globulin antibody produced in an experimental animal, or (2) may also be the result of deposition of non-antibody globulin (normal or pathologic) on modified red-cell surface.

The change of the surface of the red cell which permits deposition of globulins may be caused by a drug, a virus, a toxin or other as yet unknown metabolic processes.

III. Isospecificity of Autoantibodies. At first it was thought that autoantibodies were non-specific and that they reacted with red cells regardless of their group. Later studies have shown that there are autoantibodies which react specifically with one of the Rh factors.

IV. Viruses and Autoimmune Hemolytic Anemia.

1. *Virus pneumonia.* Hemolysis is late, usually taking place during the third week, and frequently after the patient's recovery from infection. Occasionally there is hemoglobinuria and a palpable spleen. This disease is seen mostly in adults. There is acrocyanosis of the nose, ears and hands. Gangrene of the extremities and phlebothrombosis may occur, though extremely rarely. The prognosis is generally good.

As for laboratory findings in this disease, autoagglutinins make it difficult to count the erythrocytes. Severe anemia may develop rapidly—sometimes overnight. The white blood cell count may be elevated.

Cold agglutinins are present in high titers.

2. *Infectious mononucleosis.* Autoimmune hemolytic anemia may be an occasional complication of this disease. Abnormal lymphocytes are present. The serologic test for infectious mononucleosis is positive, and the Coombs test is positive.

Autoimmune hemolytic anemia may complicate other virus infections such as influenza A, Coxsackie virus A, measles, varicella, encephalitis and herpes simplex.

V. Paroxysmal Cold Hemoglobinuria (P.C.H.). Two types of this disease are recognized. The first of them, typical P.C.H., is frequently syphilitic. The clinical picture is characteristic. Exposure to cold initiates the attack of hemolysis. This is the disease in which Landsteiner first established the presence of autoantibodies in 1904, by the so-called Donath-Landsteiner test. The serology is biphasic; i.e., there is bithermal hemolysis. The antibody combines with the red cells at the lower temperature in the exposed parts of the body, but the hemolysis of the red cells takes place in the parts of the body having a normal body temperature. Complement is needed in this reaction.

The second or non-syphilitic type can be either acute and transient, sometimes complicating infections of various kinds, or can be chronic and "idiopathic."

These types and subtypes are interrelated by virtue of the bithermal characteristics of the cold autoantibody.

ETIOLOGY AND PATHOGENESIS OF AUTOIMMUNE HEMOLYTIC ANEMIA

Two concepts of the pathogenesis of autoimmune hemolytic anemia have recently been offered. According to one theory, a change in erythrocytes makes them "foreign" to antibody-forming tissues, and thus antigenic and capable of stimulat-

ing production of antibodies. According to the other theory, a change occurs in antibody-forming tissue.

Several factors are capable of changing the erythrocytes. Drugs can change them chemically. Viral infections such as virus pneumonia, infectious mononucleosis, influenza virus A, Coxsackie virus A, measles, varicella, smallpox vaccine, poliomyelitis and a variety of other infections can change them. The claim that hemolytic anemia is caused by the virus of Newcastle disease awaits confirmation. Bee stings have been held responsible for a hemolytic reaction.

Similarly, there are differing theories about the mode of action of the viruses. It is possible that they damage red-cell surface, but as yet there is no evidence in support of this claim. Actually, anemia occurs during convalescence, in virus pneumonia patients, when the concentration of virus is likely to be low. Another possibility is that an alteration of the erythrocytes leads to antigenicity, but this concept has not been reliably established.

The theory that a change occurs in antibody-producing cells is the more promising one. This point of view is increasingly supported by evidence. Elaborating the somatic mutation hypothesis, Burnet says that so-called "forbidden" or irregular clones of histiocytes appear by mutation and produce antibodies capable of reacting with the host's own tissues. The following pieces of evidence support this idea: (1) Clinical cold autoantibody disease is more common in patients of advanced age, in whom neoplasms are also more likely to occur. The origin of such neoplasms has been related to mutation. (2) In the young, mutations may be the abnormal response to infections. (3) The frequent development of autoantibodies in malignant lymphomas has been explained by the hypothesis that lymphoma cells may be immunologically distinct from the cells of the host. Autoimmune hemolytic anemia in lymphoma may be the result of immunologic reactions of lymphoid cells against normal blood cells of the host.

Genetic Factors. Here belongs the autoimmune hemolytic anemia in mice.

Mechanisms Involved in Hemolysis. The spleen disposes of cells coated with antibodies and giving a positive Coombs test. Coarsely-agglutinated erythrocytes and cells exposed to complement-fixing antibodies are removed mainly by the liver.

There are several reasons for splenic activity: (1) Plasma proteins in the spleen are more concentrated than in mixed arterial blood. In the dog, the concentration of plasma protein was shown to be increased 1.5 times. (2) To a limited extent, the spleen is the site of antibody production; hence the locally higher concentration. In the spleen, erythrocytes are exposed for a longer period to the action of the antibodies. (3) Spherocytosis is involved. The fact that spherocytes are less plastic predisposes to splenic sequestration. (4) Erythrostasis is a factor, especially in the presence of spherocytosis and increased osmotic fragility. Also, coating by antibody interferes with the normal metabolism of erythrocytes.

Summary. Autoimmune hemolytic anemia is probably a group of diseases. The factors involved in its pathogenesis include the following: (1) Some individuals have a tendency to develop antibodies, a tendency which may be genetic. (2) Deviations in antibody-producing mechanisms (somatic mutation) are more likely than are changes in antigenicity of erythrocytes. (3) A process may stimulate excessive activity of an already existing function. This may be especially applicable to cold antibodies, which are present normally, though in low titers.

POSSIBILITIES AS REGARDS TREATMENT

Splenectomy is not so popular as it used to be, for steroids are the therapy of choice. In some cases, large amounts of steroids must be administered. If steroid therapy fails, splenectomy may have to be done, but only if incomplete warm antibodies are responsible for the anemia. Splenectomy is not recommended in cold-agglutinin disease.

Then there is the problem of blood transfusions in autoimmune hemolytic disease. It may be difficult to determine the patient's blood group because of spontaneous agglutination, and consequently it may be exceedingly difficult to find a compatible donor. Frequently, the only way out is to choose the least incompatible blood by means of highly sensitive crossmatching tests. When blood is given, it is advisable to use packed cells rather than whole blood.

It is advisable to use blood sparingly. These patients get along well on hemoglobin levels considerably below what is considered normal for healthy persons, and attempts to raise their hemoglobins to normal levels may actually be harmful.

In autoimmune hemolytic anemia of the cold variety, the course is less vehement, steroids are less effective, and splenectomy is not indicated. Transfusions are tolerated even worse than in warm autoantibody disease. Prevention is the most effective method of handling patients with cold antibody disease—i.e., keeping them away from cold.

PROGNOSIS

Autoimmune hemolytic anemia consists of a variety of clinical conditions. (1) In idiopathic warm autoimmune disease, mortality rates from 25 to 50 per cent have been reported. (2) In chronic cold autoimmune hemolytic disease, the mortality is lower than in warm antibody diseases. (3) In secondary autoimmune hemolytic disease, prognosis depends upon the primary disease. It is particularly good if the anemia is a complication of a viral infection.

TABLE I

SUMMARY OF SEROLOGIC ASPECTS OF AUTOIMMUNE HEMOLYTIC ANEMIAS

Form of the Disease	Autoantibody
1. Idiopathic and symptomatic warm autoimmune hemolytic anemia	a. Incomplete warm antibody b. Warm hemolysin
2. Chronic and acute transient cold agglutinin diseases	a. Abnormally elevated cold agglutinins b. Monothermal cold hemolysins
3. Chronic syphilitic and transient non-syphilitic paroxysmal cold hemoglobinuria	Bithermal cold hemolysins of the Donath - Landsteiner type

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Postgraduate Course on Pediatrics S.U.I. College of Medicine, Iowa City

The registration fee for members of the Iowa Chapter of the American Academy of Pediatrics will be $10; for non-members, it will be $20. This program is accredited for 8½ hrs. by the American Academy of General Practice.

Wednesday, September 16

9:15 a.m. "Current Concepts of Bilirubin Metabolism"—Robert A. Ulstrom, M.D., professor of pediatrics, University of Minnesota

9:45 a.m. "Exchange Transfusion: A Review of Technic and Indications"—R. E. Carter, M.D., and Jack Spevak, M.D.

10:15 a.m. "Differential Problems in the Newborn's Chest"—Bruce D. Graham, M.D., professor and chairman of pediatrics, Ohio State University

11:00 a.m. "Otitis Media: Current Thoughts"—James A. Donaldson, M.D.

11:30 a.m. "Infectious Hepatitis"—Albert P. McKee, M.D.

12:00 noon QUESTION AND ANSWER PERIOD

12:30 p.m. LUNCHEON

1:30 p.m. "Renal Function Studies: Their Value"——George M. Owen, M.D., and Carl E. Nelsen, M.D.

2:00 p.m. "Hydrocephalus: Diagnostic Studies, Indications and Implications"—William E. Bell, M.D.

3:00 p.m. "The School Psychologist: What He Offers and What He Expects From Pediatricians"—Fred Reese, Jr., consultant, psychological services, Iowa Department of Public Instruction, Des Moines

3:30 p.m. "What the Pediatrician Expects From the Psychologist"—Gerald Solomons, M.D.

4:00 p.m. QUESTION AND ANSWER PERIOD

4:15 p.m. BUSINESS MEETING, IOWA CHAPTER, AMERICAN ACADEMY OF PEDIATRICS

6:30 p.m. SOCIAL HOUR AND DINNER—University Athletic Club

Thursday, September 17

9:00 a.m. "Adolescent Programs: Their Worth"—Dr. Graham

9:30 a.m. "Metabolic Disease of the Gastrointestinal Tract"—Dr. Ulstrom

10:20 a.m. "Cardiac Success"—Johann L. Ehrenhaft, M.D.

10:50 a.m. PEDIATRIC POTPOURRI—FOUR CASES—Moderator: Howard H. Hildebrand, M.D., McFarland Clinic, Ames

12:00 noon QUESTION AND ANSWER PERIOD

Hypersplenism and Its Relationship to Humoral Factors

BOHDAN J. KOSZEWSKI, M.D., M.S.
Omaha, Nebraska

The term *hypersplenism* designates an obscure clinical syndrome, persisting in our vocabulary because we have no satisfactory alternative to describe our experiences. The concept arose from empirical observations of beneficial results following splenectomy in cytopenic hematologic disorders. It assumes an exaggerated function of the spleen on the *normally formed* blood elements. Hypersplenism is in contradistinction to diseases like hereditary spherocytosis and acquired hemolytic anemia, where the function of the spleen is assumed still to be physiologic but exaggerated by the presence of *abnormal* blood elements in the peripheral circulation. As long as the functions of normal and abnormal human spleens remain incompletely explored, however, the etiology and pathogenesis of the hypersplenic syndrome will remain controversial.[1]

We know that the human spleen is a compound organ in which histogenetically different tissues are assembled together. It is surrounded by a fibromuscular capsule which is closely related to the interlacing system of trabeculae. It has an abundant blood supply which ends in an open sinusoid circulation. It also contains a rich channel of lymphatic drainage, with a considerable amount of lymphoid tissue, and it is an important site of antibody formation. It is also one of the primary sources of reticulo-endothelial activity, and under normal circumstances, the circulating foreign particles, including damaged formed-blood elements, are filtered by the phagocytes of the spleen. Removal of the spleen in children causes a decreased resistance to infection.[2] In mature individuals, however, the spleen may be resected with impunity, for other organs of the lymphoreticulo-endothelial system will take over its defensive functions. It is also a potential blood-forming organ, if there is a need for increased blood production.

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EARLY AND RECENT PHYSIOLOGIC CONCEPTS

In 1883, Banti[3] postulated a marrow-inhibiting factor in the spleen which was supposed to cause a splenic anemia, ascites, jaundice and cirrhosis of the liver. In multiple publications, he firmly opposed the idea that splenomegaly was due to a primary liver ailment, and claimed that cirrhosis was secondary to changes in the spleen. The word *hypersplenism* was first used by Chauffard[4] when he described the role of the spleen in hereditary spherocytosis. Eppinger *et al.*[5] applied the term to all hemolytic anemias, explaining them in terms of increased blood destruction and phagocytosis within the spleen. Unfortunately, in his observations, Eppinger included cases of pernicious anemia which made the therapeutic results of splenectomy look disastrous. Later, Kaznelson[6] applied analogous ideas to chronic thrombocytopenias with excellent results, and splenectomy became one of the important tools in hematologic therapy.

The modern concept of hypersplenism was created by Dameshek,[7] who postulated that the spleen has an influence upon the delivery and maturation of cells in the bone marrow. Hypersplenism, according to his theory, would represent an exaggeration of this activity, and would be characterized by (a) splenomegaly, (b) peripheral cytopenias, (c) hypercellular bone marrow, and (d) favorable response to splenectomy. However, the concept of hypersplenism has gradually been broadened,[8] and many cases without enlarged spleens or with hypoplastic bone marrows have been shown to benefit from splenectomy.[9] Even in myelosclerosis or osteomyelosclerosis, beneficial results have followed the operation.[10] The question of hypersplenism arises any time when cytopenic conditions cannot be related to toxic agents, intrinsic cell defects or immunologic mechanisms. The indications for removal of the spleen have become quite liberal, and often enough the operation is undertaken on the basis of a gamble —when no other therapeutic procedures have seemed to help.[11]

The pathogenesis of hypersplenic cytopenia is insufficiently clear. According to Doan,[8] selective sequestration and phagocytosis by the spleen are responsible for a depression of blood elements. The condition is considered primary when there is no evidence of any other underlying disease, and it is

regarded as secondary when the abnormal blood picture is associated with a splenic disorder of a known type such as Gaucher's disease, cirrhosis of the liver or lymphoma. Another school of thought, represented in this country by Dameshek,[9] considers the cytopenia to be due to an inhibition of the bone marrow by excessive hormonal or humoral regulation from the spleen. The evidence for both theories is rather circumstantial, and all attempts to substantiate them by means of experiments have given controversial results.[12] The same is true of methyl cellulose-induced splenomegalic pancytopenia in rats,[13] which permits deductions corroborating both the phagocytic-hemolytic[14] and the humoral theory.[15]

EXPERIMENTS AT CREIGHTON

Because of these difficulties, we attempted to establish the presence of humoral factors in cytopenic patients by transfusing their blood into human volunteers who were of the same blood groups as the patients, and were free of any chronic hematologic disease. The transfusate consisted of 5 ml. of blood per Kg. of the recipient's body weight, and it was given over a 45-minute period. The recipients' erythrocytes, leukocytes and platelets were counted at 5, 10, 20, 40, 60 and 90 minutes, and then at 2, 3, 4, 5, 6 and 8 hours after the start of the transfusion. In an effort to obtain baseline values, we examined the reactions of hematologically normal recipients to the blood from normal donors in five instances, and in addition performed blood counts on 15 relatively healthy persons who had received therapeutic blood transfusions.

In those 20 instances where normal blood had been given to healthy individuals, the transfusion tended to produce an increase of formed blood elements in the recipients. Only six patients showed a drop, and it was never greater than 23 per cent of the initial values for leukocytes (Figure 1), and 24 per cent for platelets (Figure 2). There also were no counter-reactions that could be traced to an initial decrease in recipients' blood values. Results similar to those in human beings were obtained in Rhesus monkeys when they had been given 2.5 ml. of human serum per Kg. of body weight. These animals proved to be *the only species free of unspecific cytopenic reactions* to normal human serum. Therefore, they provided a sensitive system for evaluations of abnormal human humoral factors.[16]

Eight cases of chronic pancytopenia due to circulating cytodepressant substances have been collected in the last eight years. They all have been suspected of hypersplenism, but in the final analysis two of them suffered from so-called "refractory anemia," two had osteomyelosclerosis, and four had agnogenic myeloid metaplasia. None of them showed any known complete or incomplete antibodies to erythrocytes, leukocytes or platelets. However, their blood exerted a significant cytopenic effect when transfused into either human volunteers or Rhesus monkeys. A fall of 34-53 per cent was noted in recipient leukocyte count during the first hour, and then a gradual return to normal within the next two to four hours. Platelets decreased by 33-63 per cent (Figure 3). No anemia was evident during the first day, but one of the recipients was found to be quite anemic on the third day after the transfusion. As compared with the normals, the induced cytopenia in 12 experiments with blood from eight cytopenic patients was statistically significant for leukocytes at 20-90 minutes, and for platelets at 20-60 minutes (p less than 0.01).

Three of these eight patients were splenectomized, and tolerated removal of the spleen poorly, all dying within six months of the operation. The remaining five remained alive up to 10 years on supportive therapy only. In contrast, another six cytopenia patients who were also suspected of hypersplenism, but did not show depressant substances in their blood, tolerated removal of the spleen well, and for all practical purposes could be regarded as cured.

DISCUSSION

The presence of cytopenic substances in the blood seems to be of value in the screening of patients with hypersplenism. Our findings do not exclude the possibility that the splenic pancytopenia is due to excessive phagocytosis in the hyperactive spleen, or to a depressant effect of splenic hormones on the bone marrow. However, they favor the concept that a specific group of humoral pancytopenias must be differentiated from those of a toxic, immunologic or hypersplenic character.

The finding of a group of humoral-cytopenia patients who tolerate removal of the spleen poorly makes the selection of patients for splenectomy more critical. The diagnosis of hypersplenism should be reached only after the patients have undergone extremely thorough work-ups, and after conditions simulating this syndrome have been reasonably excluded (Table 1).

Exhaustive history-taking and physical examination are called for, to rule out toxic influences and neoplastic disorders. A complete blood-cell count has to be done, with an estimation of reticulocytes, for in contrast to congenital or acquired hemolytic anemias, which have mostly elevated reticulocyte values, the true splenic anemia is of the hyporegenerative type. Bone-marrow studies are also necessary if one is to define the state of the blood-forming organs and to exclude primary or secondary hypoplastic anemias.

Bone-marrow response to certain stimuli, like epinephrine and certain pyrogens, have been repeatedly emphasized as of value for predicting the results of splenectomy. However, our experience

TABLE I

CLINICAL STUDIES NECESSARY IN ESTABLISHING DIAGNOSIS OF HYPERPLENISM

1. History and physical examination
2. Complete blood count, with reticulocytes
3. Bone-marrow studies
4. Bone-marrow response to certain stimuli
5. Splenic aspiration
6. Liver biopsy
7. Eventual splenoportogram
8. Search for immunologic factors
9. Life spans of red cells and platelets
10. Scanning of body surface and spleen
11. Serum injection to Rhesus monkey

with them was unsatisfactory, for the results were uniformly positive as long as the bone marrow was not completely exhausted. Even cases of osteomyelosclerosis with extramedullary erythropoiesis showed transient leukocytosis and thrombocytosis after the injection of epinephrine. Splenic puncture, by the aspiration technic of Moeschlin, is also needed to reveal the secondary changes in the spleen due to infiltration with lymphosarcoma, Gaucher's cells or parasites. Liver biopsy and eventual splenoportography are indicated to determine the cause and the extent of portal hypertension and to exclude extrahepatic occlusion of the vessels.

The search for immunologic factors in a patient's serum must be extensive and should include tests for complete and incomplete antibodies against erythrocytes, leukocytes and platelets. However, those tests are not always reliable, since unspecific false-positive reactions in progressive cirrhosis of the liver are not rare, and false-negative results may also occur. Estimation of the life spans of red cells and platelets may be of help in those situations, although the survival of cells is shortened in both hypersplenic and immunologic cytopenias. Lately, the scanning of the body surface for gamma radiation, after the injection of radioactive chromate-tagged cells, has been used for detection of abnormal cell-destruction in the

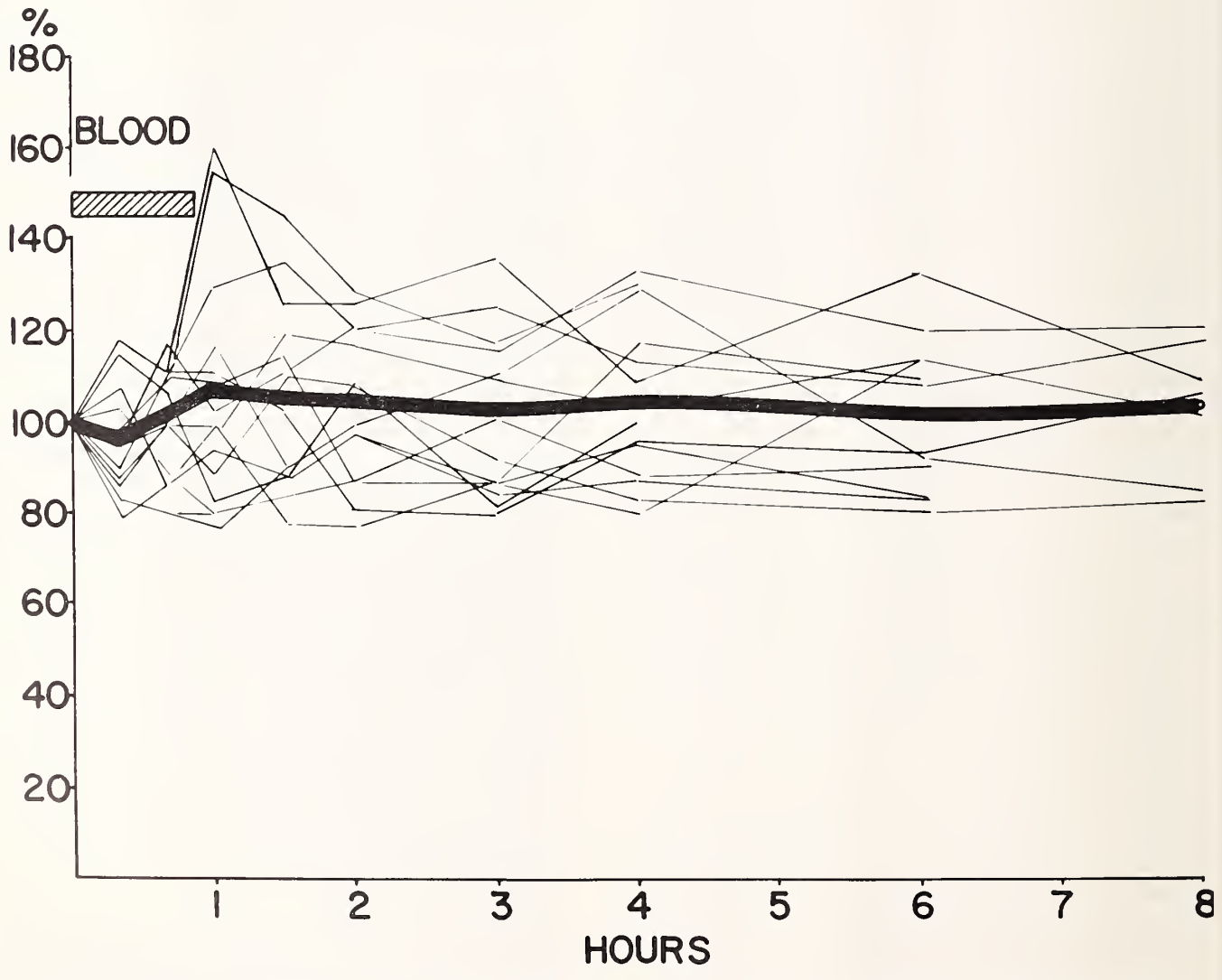


Figure 1. Changes of the leukocyte counts in the subjects receiving normal blood. The thick line represents mean values.

spleen.[17] Extensive red-cell sequestration in the spleen seems to be a good indication for splenectomy, although false-negative tests are not uncommon.

All these examinations do improve the selection of cases for splenectomy to some extent. However, there is still a need for better and more specific tests. In our opinion, the search for humoral depressant agents should be added to this list. It is only hoped that a less expensive and complicated test will be devised to replace the one in which the Rhesus monkey is used.

However, before accepting the existence of humoral cytopenias, we had to prove that the depressant factors observed in our cases were different from immunologic phenomena. Since five of our cytopenic patients had never received therapeutic blood transfusions prior to the examination, isosensitization probably could have been excluded. The depression caused by these factors was also less intense and of shorter duration than that which is produced by known leukocyte or platelet antibodies.

Cohn-fractionation of the sera was performed in two of our cases, and the depressants have been identified with fraction III, the beta-globulin group of the human sera. This fraction caused a drop of 34 per cent in the leukocytes and 51 per cent in the platelets, in a Rhesus monkey, whereas the other fractions had no such effect. It therefore is different from the agglutinins demonstrated by Tullis[18] in pathologic sera, which are gamma globulins and cause iso-agglutination.

Those indirect findings were very helpful in our reasoning that the humoral factors are different from immunologic agents, but we could not reach a final conclusion until we were able to produce these substances in animals.

In our search for suitable pharmacologic agents, we were helped by the fact that rabbits proved to be abnormally sensitive to cortisone. Several of them became anemic and died while receiving daily doses of 20 mg. of cortisone per kilogram of body weight. We then decided to check whether other hormones could produce substances that were cytotoxic to the same species. Male rabbits were prepared with intramuscular injections of cortisone (10 mg./Kg. of body weight), testosterone (10 mg./Kg. of body weight), and estrone (2 mg./Kg. of body weight) daily for 10 days, and

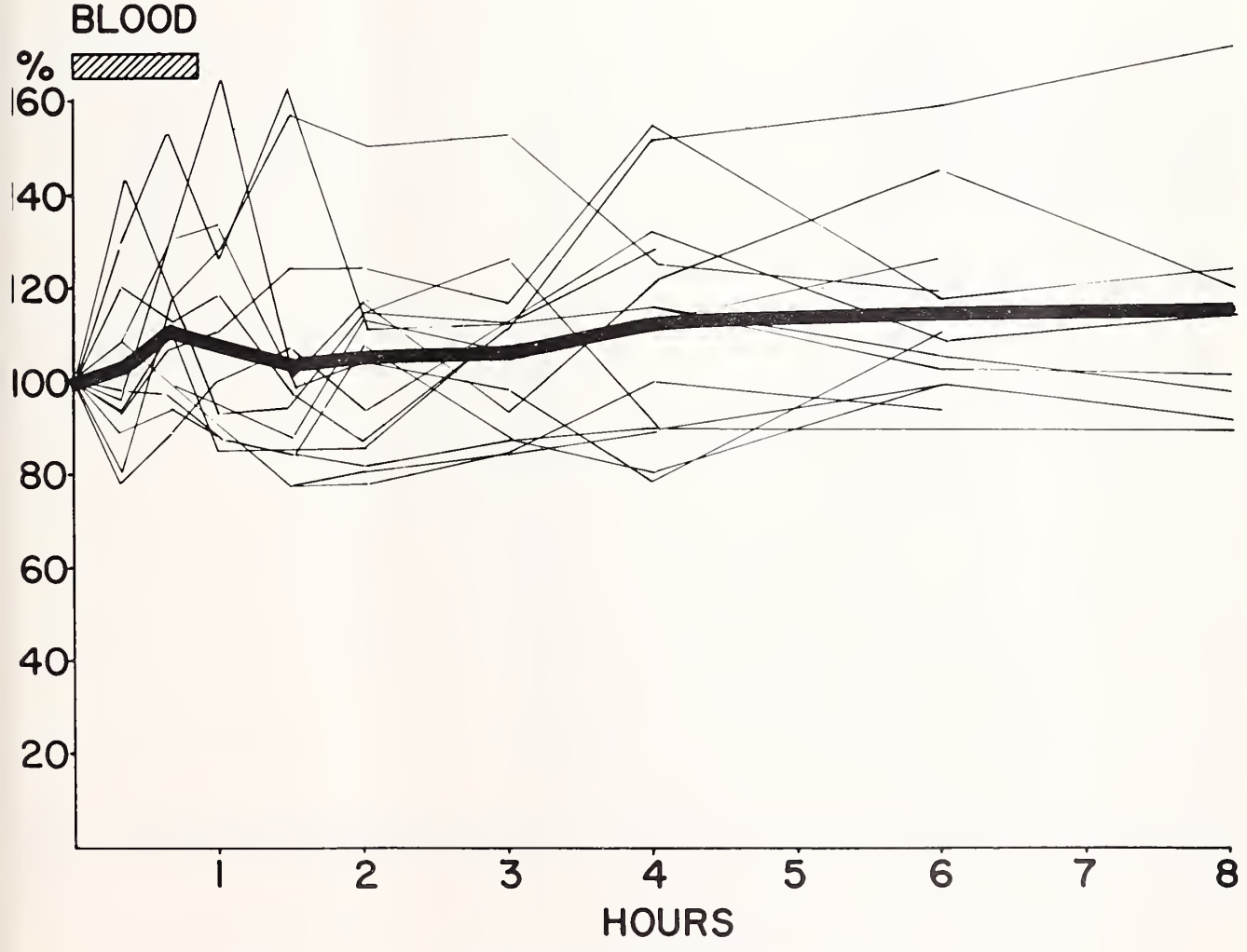


Figure 2. Changes of the platelet counts in the individuals receiving normal blood.

blood was drawn from them before the experiment was started and at 10, 20, 30 and 40 days later. The serum was given subsequently to healthy white male rabbits in a dose of 2.5 ml./Kg. of body weight. In preliminary studies, it was found that normal rabbit serum is not cytotoxic to the same species, and the variations fell within the technical aberrations of ±30 per cent for leukocytes and ±26 per cent for platelets. Compared with this, testosterone caused a production of weak leukocyte- and platelet-depressant substances in infected animals. However, cortisone and estrone were without effect in this respect.

Subsequently, several other natural and modified steriods were checked for the production of cytotoxic substances in rabbits. One of them, the 5-androsten-3β-16β-17β-triol produced potent depressant substances which proved to be thrombotoxic for 10 days and leukotoxic for 30 days (Figure 4).

The results of preliminary studies with testosterone and 5-androsten-3β-16β-17β-triol are probably important, and indicate a need for further studies. Possibly the humoral cytopenias are related to faulty endogenous metabolism, and may not be a primary disease of blood-forming organs as was originally assumed.

The existence of cytopenias due to endogenous humoral factors seems established. These cases are different from hypersplenic and immunologic cytopenias, although clinically they may mimic one another.

The presence of cytopenic substances in blood seems to be useful in the screening of patients for splenectomy. In our opinion, humoral depressant agents in patients with cytopenia are a contraindication to splenectomy. In such cases, the cytopenia seems to be the expression of a metabolic disorder that will remain unchanged or may even be aggravated by removal of the spleen.

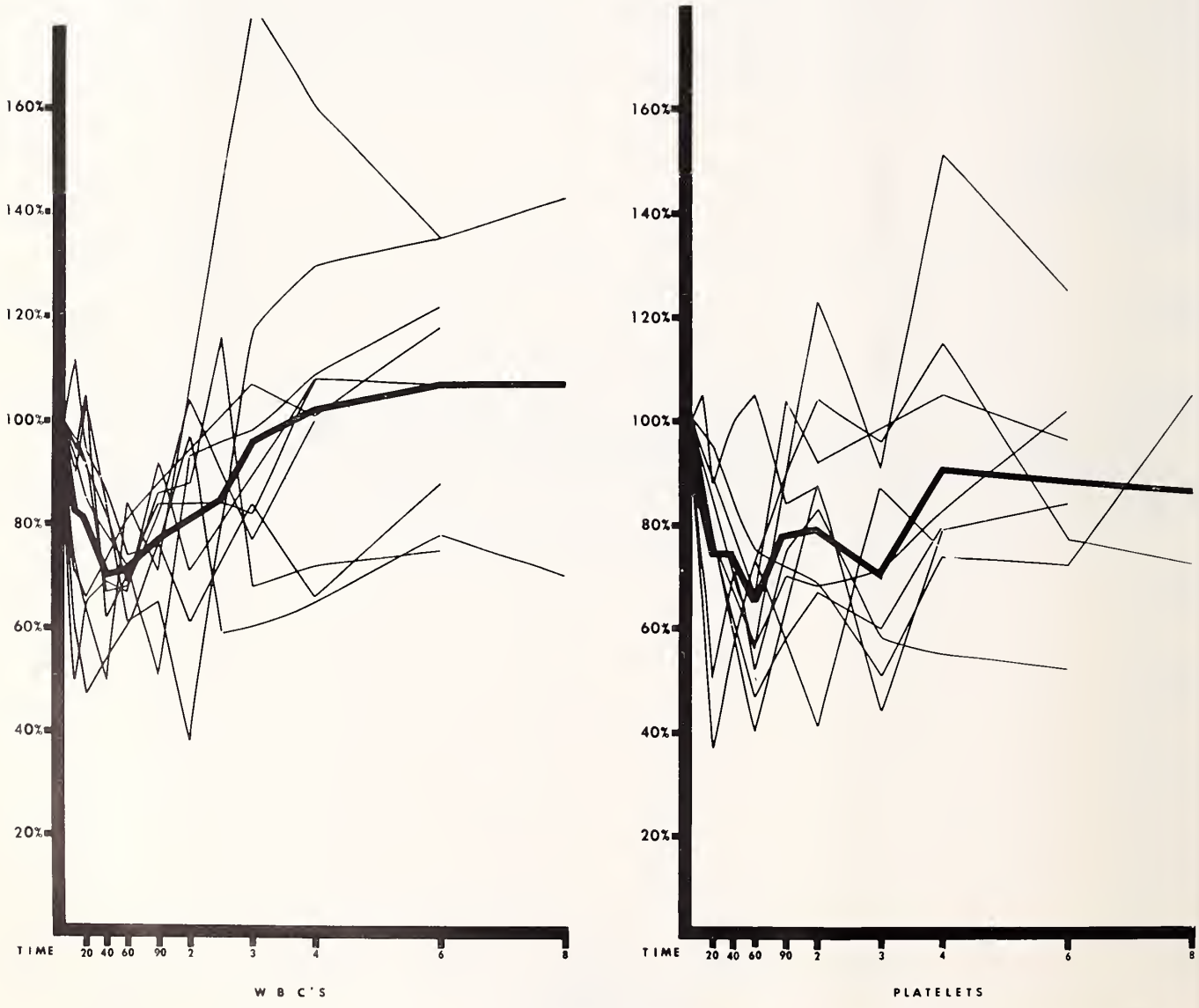


Figure 3. Leukocyte and platelet changes in normal subjects receiving blood from patients with humoral pancytopenia.

SUMMARY

The etiology and pathogenesis of hypersplenism are obscure, and they will remain so as long as the normal function of the spleen is virtually unknown. Since the original concept of hypersplenism by Dameshek has been broadened, the condition is suspected any time a cytopenic state cannot be related to toxic agents, intrinsic cell defects or immunologic mechanisms.

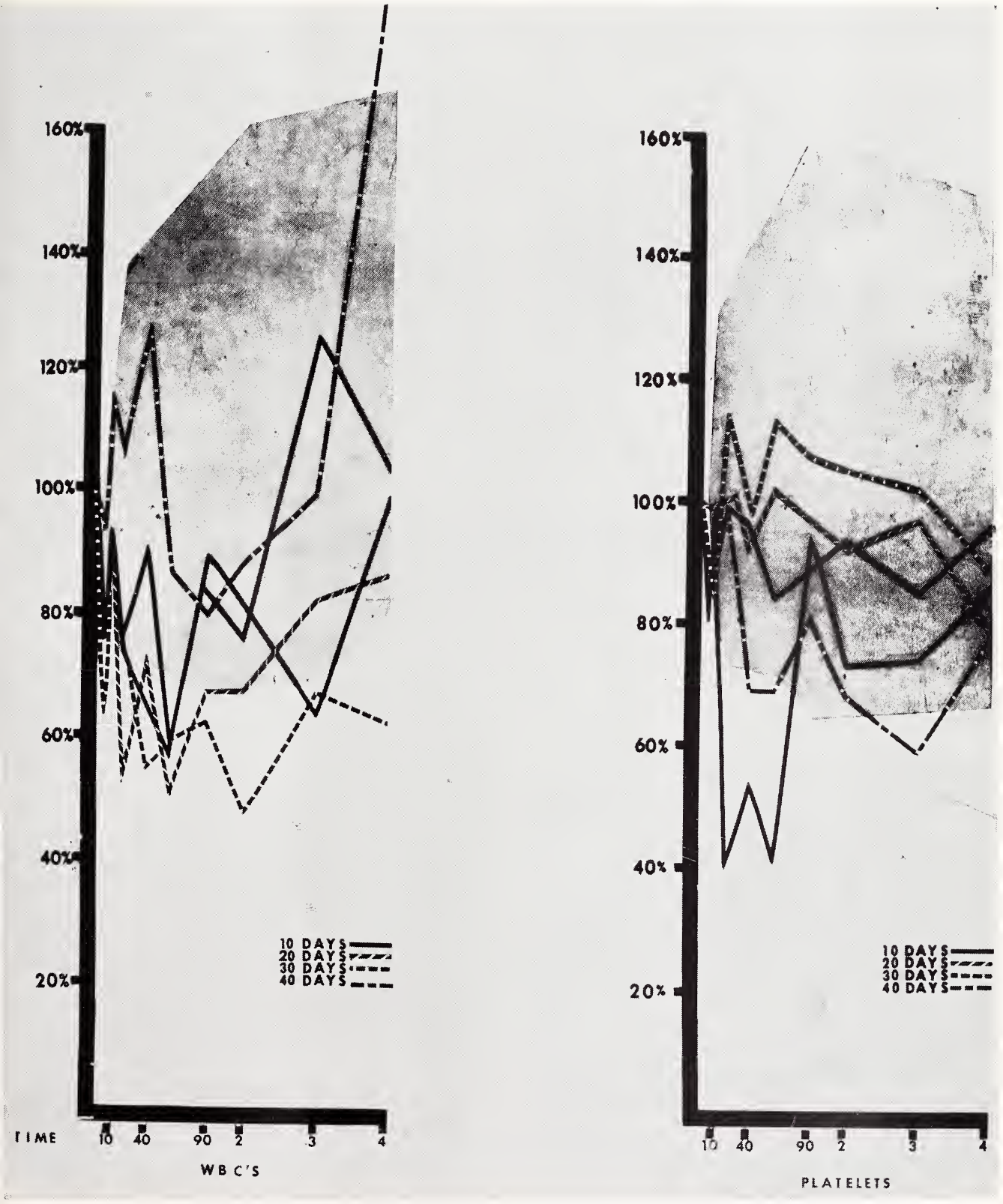


Figure 4. Cytotoxic effect of the serum from rabbits treated for 10 days with 5-androsten-3β-16β-17β-triol.

An independent group of cytopenias due to humoral factors is postulated. The cytopenic substances seem to be related to false intermediary metabolism. Splenectomy is contraindicated in such cases, for removal of the spleen will not correct the cytopenia, and in some instances may even aggravate it.

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The Surgeon and Anemia

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WHENEVER A SURGEON is consulted about a patient with anemia, the myriad of causes for that condition necessarily flash through his mind. For this reason, I shall first present you with the classification I use in approaching such a problem. It enables me to sort out the possible causes in a simple, mechanical fashion. If, during my presentation, I wander about, discussing first one and then another of the subjects which come to my mind, I hope you will forgive me. Then I want to talk about some iatrogenic or surgical causes of anemia. Later, I shall point out some peculiar manifestations of anemia which can provide clues to surgical problems. Naturally, I shall present some personal views on splenectomy. Last, I shall briefly discuss hidden anemia due to diminished blood volume in the patient who is facing a major operation.

Dr. Ziffren, a professor of surgery at the SUI College of Medicine, made this presentation in Des Moines on Mercy Hospital Medical Day, October 26, 1963.

CLASSIFICATION OF ANEMIAS

Anemias can be divided into three groups: (1) those in which there is an inadequate production of red cells; (2) those in which there is an excessive destruction of red cells; and (3) those in which red cells are lost through hemorrhage.

INADEQUATE PRODUCTION

Inadequate nutrition. We often see a simple iron-deficiency anemia in an infant, primarily due to an inadequate diet. The child's growth is progressing faster than his diet allows him to keep up. In the adult, contrastingly, iron-deficiency anemia is ordinarily due to blood loss. A second type, pernicious anemia, occurs in patients with vitamin B_{12} deficiency. Routinely, whenever I am called to see a patient with anemia, I make sure that a gastric analysis is done, with histamine stimulation, to find out whether free acid is present, since free acid is always *absent* in cases of pernicious anemia. Strangely, some patients with diseases of the ileum such as regional ileitis show such a deficiency. Apparently the absorption of vitamin B_{12} under the influence of intrinsic factors takes place through the lower ileum. There is a rare group with vitamin B_6 deficiency. Finally, folic-acid de-

ficiency occurs in an occasional pregnancy, in some patients who take anticonvulsant drugs, and in cases of intestinal malabsorption. In this latter group a host of problems can arise because a myriad of studies may have been carried out in an effort to prove that intestinal malabsorption is taking place due to a rare condition such as sprue, non-tropical sprue or some unknown cause.

I should warn you that a more common cause of this difficulty lies in the superior mesenteric artery syndrome. It is an entity that can be treated surgically if one remains aware of it. Provided adequate collateral circulation is established, gradual occlusion of the superior mesenteric artery can take place with few or no symptoms. Ordinarily, however, atherosclerotic occlusive disease of the arteries going to the abdominal viscera behaves as it does in the heart, extremities and brain. It progresses faster than does the development of a collateral circulation, and symptoms naturally result. The absorptive quality of the intestine is dependent on its blood supply. It is not surprising, therefore, that impairment of the blood supply results in malabsorption. These patients have a rapid intestinal rate, as well as malabsorption. They have bulky stools or diarrhea. Abdominal pain is almost always present, but it is not usually severe. Sometimes the condition is called "intestinal angina" for that reason, since the crampy pain that develops shortly after a meal persists for two or three hours and then subsides. The greater the amount of food ingested, the greater the pain. With fasting, pain usually does not develop, and in consequence, weight-loss is a prominent symptom. Almost always, the obstruction of the superior mesenteric artery is situated about 1½ to 2 cm. from the take-off of the artery from the aorta, and is the result of an atheromatous plaque within the vessel. Occasionally a bruit is audible over the upper abdomen, in association with such a stenotic process. Before operation, the diagnosis can be proved only by an aortogram with a lateral projection that will reveal this particular problem. It can be ascertained quickly at operation if one notes the absence of small intestinal mesenteric arterial pulsations. However in such a patient, one must always be aware of the possibility that a cancer has been masquerading as such a process and has been completely overlooked in the roentgenograms.

Marrow failure. A second group of cases arising from inadequate production of red cells results from marrow failure. The bone may have become filled with cancer, as in metastases from a breast tumor. Leukemia is another prominent cause involving the marrow. Rarely, the marrow is too fatty, or fibrosis occurs in the marrow. The aplastic anemias, of course, are in this group. The anemia may be primary, and if so, no causes can be found. Or it may be secondary to poisons, chemicals or drugs. The most prominent agents of this sort are the chemicals used in agriculture and in florists' hothouses. Others will be listed later under "poisons."

A bone-marrow biopsy is often requested of the surgeon when a complete study is desired or when bone-marrow aspiration has failed. The two best sites for a bone-marrow biopsy usually are the sternum, where an ordinary trephine worked by hand is suitable, or at the iliac crest, where a part of the crest can be reflected and some marrow removed.

Hormonal factors. This group of causes for inadequate production is rarely considered. Hypothyroidism can do it. Adrenocortical insufficiency, atrophy of the testicles and pituitary-gland failure belong in this group. Severe hyperparathyroidism is in this group, probably because of fibrous replacement of the marrow.

Infection and chronic illness. Inadequate production of blood can be due to a bone infection such as osteomyelitis or tuberculosis. Much more common as a cause is a hidden infection, often the result of a complication of surgery. For instance, there is the patient who has had an appendectomy performed, who runs a mild fever and whose blood count keeps falling. Under these circumstances, one should always be suspicious of a collection of pus, as in the subhepatic or subphrenic space. It is easy for the physician to forget that a falling hemoglobin level in a patient who is doing poorly is likely to be the result of an abscess.

Another cause of anemia is chronic illness. It may be situated anywhere in the body—in the lung, kidney, gastrointestinal tract, etc. A prominent cause in this group is rheumatoid arthritis.

Poisoning. Another group of anemias are the results of poisonings. For instance, uremia is a cause. Anticonvulsant drugs result occasionally in folic-acid deficiency. Naphthalene and phenacetin are sometimes responsible. Other agents sometimes implicated include phenylbutazone, chloramphenicol, sulfa drugs, hair dyes, chlorpromazine and meprobamate. Whenever a patient develops anemia, it appears logical and indeed is incumbent on the physician to stop any drugs the patient is taking, and to exclude all external agents that might be poisoning him.

Cancer. Whether primary or metastatic, cancer can be a cause. Patients with cancer often display a destruction of their erythrocytes as the result of some unknown factor. It is also true that some patients with cancer who receive irradiation therapy apparently produce some hemolytic factor from the irradiation which causes hemolysis. It is of interest, however, that renal cancer sometimes does just the opposite, producing polycythemia as a result of excessive creation of erythropoietin by the tumor. Occasionally uterine fibroid or meningioma also result in polycythemia.

Excessive destruction. Before discussing the conditions under this heading, I should like to convey to you some information that I think is of considerable interest. Daily, about 0.8 per cent

of the circulating red cells in the body are removed from the circulation. For actual maintenance of his blood supply, it is necessary for a normal individual to produce about 20 ml. of red cells daily, and this involves about 6.0 Gm. of hemoglobin. This is not the maximum of which the human being is capable. Actually, in certain states of severe hemolysis, the red cells' survival time may be as short as 15 days, though the normal is 115 days. The minimum survival time necessitates an eightfold increase in the normal rate of production, to 160 ml. of red cells or 48.0 Gm. of hemoglobin per day. To me, this seems a sensational feat on the part of the human body. Incidentally, in many conditions red-cell survival is shortened, but there is no known condition in which the survival of human red cells is ever lengthened.

A patient who is experiencing excessive destruction of red cells practically always has an elevated reticulocyte count and a bone marrow with erythroid hyperplasia. Whenever one is suspicious but isn't sure that excessive destruction is taking place, a most valuable tool is available to him—chromium-tagged red cells.

Abnormal red cells. The red cells may be of poor quality. In spherocytosis, for example, there is an increased fragility of the red cells that results in hemolytic crises. These patients with congenital hemolytic anemia always have enlarged spleens. Lately, cases of congenital hemolytic anemia without spherocytosis have been described. These result from some abnormal gene and a consequent biochemical abnormality in the red cells. In this group of cases, in contrast with the type having spherocytosis, splenectomy often is of no value. In the Negro, sickle cells and associated crises are well known. Cooley's anemia, in which the red cells become somewhat saucer-shaped, is another cause of destruction. Actually, thalassemia occurs when an abnormal gene controls hemoglobin formation and prevents it from keeping up with hemoglobin requirements. We should also mention the rare cases, in Negroes, of susceptibility to oxidant drugs such as Chloroquine, because of the lack of a specific enzyme in the red cell.

Abnormal plasma. Under this grouping, we have patients whose plasma is the cause of anemia. These include the cases of acquired hemolytic anemia. I want to remind you, however, that about half the cases diagnosed as acquired hemolytic anemia are really due to malignant lymphomas which have remained unrecognized. In other instances, the anemia is due to drug sensitivity, and in all such instances a careful inquiry into drug ingestion as well as environmental factors such as the type of work the patient has engaged in must be carried out. In addition, one must always make sure the patient has undergone a serologic test for syphilis, for that disease may be causing paroxysmal hemoglobinuria. I shall not discuss the autoimmune mechanisms which today are receiving so much attention, but I include them in this group since the antibodies detected by the Coombs' test are adsorbed from the plasma on the surface of the patient's red cells.

Hypersplenism. A prominent cause of excessive red-cell destruction is, of course, hypersplenism, due either to destruction or to sequestration of red cells. No one has yet determined whether the greatly enlarged spleen causes red-cell destruction because, though functioning normally, it is overfunctioning because it is massive, or whether it is misbehaving because of a true abnormality. Portal hypertension due to cirrhosis of the liver is a prominent cause of hypersplenism. The obstruction to the venous flow may, of course, occur anywhere along the portal system, in the liver, in the portal vein or in the splenic vein itself. The large spleen seen in this condition usually doesn't restrict itself to affecting the red cells alone, but also affects the white cells and the platelets. Formerly, splenectomy was done in these patients. It is now generally recognized that in the 20 per cent of patients with portal hypertension who have an associated anemia or pancytopenia, a portacaval shunt will eventually restore the peripheral-blood picture to normal, though the change will be quite slow. In addition, there is the fact that in the performance of such an operation, the low platelet level may by itself cause serious postoperative bleeding. Consequently, some surgeons remove the spleen when they do a portacaval shunt. Others prefer a splenorenal shunt.

In patients with myeloid metaplasia of the spleen due to myelofibrosis, the hemolysis may actually be aggravated by the spleen. It may destroy more red cells than it makes. Other conditions that may give rise to an abnormally destructive spleen include Gaucher's disease, lymphoma, Felty's syndrome, etc.

HEMORRHAGE

I shall remind you only briefly of hemorrhage as a cause of anemia. However it is very easy for the clinician who is looking for esoteric causes to forget about cancer of the cecum or stomach as hidden causes of anemia due to slow blood loss. Examination of the stool is a simple method of finding a clue to such a lesion.

IATROGENIC CAUSES OF ANEMIA

One of the most commonly written-about causes of anemia occurs in total gastric resections—in very high gastric resections, with loss of the fundic glands, the site of intrinsic-factor formation in the stomach. Megaloblastic macrocytic anemia will not appear in the totally gastrectomized patient until two or more years after operation. Since this operation is usually done for a massive carcinoma of the stomach, and since the survival rate is very low in such conditions, it usually is not seen. The probable reason for the delay in the appearance of

the anemia is that the body stores of B_{12} take that length of time to become depleted. The anemia can be prevented through the administration of vitamin B_{12}. In patients who have subtotal gastrectomies, a hypochromic microcytic anemia occasionally occurs, especially in females. It was originally thought to be due to an impaired ability to absorb iron resulting from achlorhydria or hypochlorhydria. However it has not been shown to occur in vagotomized or antrectomized patients, and consequently the theory is probably incorrect. At any rate, this type of anemia usually responds to iron therapy.

On occasion, a patient who has undergone a partial gastric resection for duodenal ulcer develops a recurrence of his bleeding. Sometimes it is due to a marginal ulcer. In other instances the location of the bleeding cannot be found. When all else fails, it is incumbent upon the surgeon to explore the patient. On rare occasions he will find that the original surgeon, either knowingly or unknowingly, failed to remove the entire antrum of the stomach at his operation and, instead, left what he considered to be the duodenal stump, with the result that the secretion of gastrin apparently continued, producing a new ulcer or a reactivation of the old one. Such a situation requires uncovering the stump—an exploration that sometimes is simple to do, and at other times is most difficult.

Another cause of anemia is an intestinal anastomosis that has created a blind pouch. This occurs when a long-loop side-to-side anastomosis has been carried out. Such patients may have abdominal cramps, occasional nausea and vomiting, distention, intermittent diarrhea, fatigue and an inability to gain weight. The anemia is usually macrocytic, and responds to vitamin B_{12}. It appears that the blind pouch interferes in some way with a factor necessary to erythropoiesis. Perhaps the large number of bacteria lodged in the pocket are responsible. Sometimes on a plain roentgenogram, the blind pouch is seen as a gas-filled structure resembling distended intestine, or resembling a soft-tissue mass. Air-fluid levels within the pouch may occasionally be demonstrated on upright roentgenograms. Barium studies may show filling defects caused by intestinal debris within the pouch. The most important element in pouch formation is the length of the blind segment after completion of the anastomosis. The longer the blind segment, the more likely a pouch formation. Some pouches are asymptomatic, require no treatment and may remain unrecognized.

PECULIAR MANIFESTATIONS OF ANEMIA

A cardiac patient, who may have been doing quite well on anticoagulant therapy for several months or even years, may start to become pale, weak and short of breath, and to display ankle edema. When the physician takes a blood count, he finds to his surprise that the patient is obviously anemic. He examines the stool and finds persistent occult blood. He stops the anticoagulant, and the bleeding stops. He restarts the anticoagulant, and the syndrome recurs. He then has the patient take a barium enema, and a small carcinoma or polyp is visualized. These symptoms appear because the anticoagulant has caused early bleeding in a friable mucosal lesion. Bleeding probably would not have occurred until much later, when the lesion had grown to a larger size and had been traumatized by the fecal stream, but because of the anticoagulants the bleeding has started when the lesion was quite small. This syndrome has been drawn to my attention on two occasions in two different patients. If you should encounter it, I think you should request a complete gastrointestinal work up of the patient.

Another type of problem occurs in the elderly, pale female who suffers no pain but develops fatigue and weakness from anemia. The only finding is a hiatal hernia that has been present for many years. This hernia can be the cause of a persistent ooze that will not respond to medical therapy but only to surgical correction of the lesion. It can be proved not only by occult blood in the stool, but also by aspiration of the stomach. Rarely, an occult carcinoma lies hidden in the recesses and is not displayed by the roentgenogram, but is the real cause of the anemia. For this reason, in spite of the age of the patient, I advise operative intervention.

In problem patients with no evident cause for bleeding, the only advice I can give is to pass a Levin tube into the stomach when bleeding is actually taking place. By this means one can make sure that the bleeding is proximal to the ligament of Treitz. Often a myriad of roentgen studies will have been done, but no one will have simply passed a tube to see whether the bleeding is in the stomach or its immediate vicinity. If so, gastroscopy may or may not be helpful. But operation should be done at the time of bleeding, if possible, to locate the bleeding site.

The patient who is bleeding from a site distal to the ligament of Treitz can be the most difficult of all. If exploration is undertaken, it should be done during a bleeding episode. Occasionally one is fortunate enough to find a Meckel's diverticulum, a small polyp or a small-bowel tumor such as a neurogenic tumor or carcinoma. But too often, even if exploration is done at the time of bleeding, the cause is not found. The patient and his family must be forewarned of this possibility in advance of the exploration.

SPLENECTOMY

There are definite indications for splenectomy. For instance, the results of splenectomy are particularly good in cases of congenital hemolytic anemia.

If a patient with acquired hemolytic anemia is considered for splenectomy, one must make sure

that he is not dealing with a case of systemic lupus erythematosus, lymphoma, or malignancy of the ovary, breast, stomach or prostate. Consequently, not only is a careful physical examination indicated, but roentgenograms of the entire gastrointestinal tract should be ordered. A muscle biopsy should be done, and if a lymph node is enlarged, it should be removed for histologic examination. The operation is never so successful in this condition as in hemolytic anemia of the congenital type. Some patients are cured and then have relapses. Others have slight responses, and at least a third fail to respond at all. I feel that splenectomy should be done when steroids in large doses have failed to produce a remission, or when steroid therapy has proved too dangerous for the patient—for instance, by producing a bleeding duodenal ulcer or psychiatric disturbances.

There is no question that splenectomy is sometimes indicated in Hodgkin's disease, Gaucher's disease, leukemia, thalassemia, myelofibrosis and lupus erythematosus. The operation should be undertaken, however, only when an accurate evaluation of hemolysis has been obtained by red-cell survival studies, and when the spleen has been identified as the primary focus of red-cell destruction. Even in such instances, all one is trying to do is to lessen the amount of red-cell destruction, rather than to effect a cure. The patient must understand this. Whenever a patient has a hypoplastic bone marrow, the surgeon should be extremely cautious. Even when the spleen is enlarged, the result of splenectomy is usually disappointing.

I don't want to belittle the splenectomy operation. Sometimes it is a simple procedure, but at other times it can prove very trying. I won't recount my experiences in the latter sort of instances, but shall mention only that the bleeding may seem to be coming from every site—not only from the splenic bed but sometimes from the abdominal wound itself. Each case must be approached individually, and the decision regarding operation should be concurred in by the physician as well as the surgeon.

BLOOD VOLUME

I should like to close by discussing the problem of anemia in the patient who is facing an operation. Too often, when a patient in the older age group is taken to the operating room and is given an anesthetic, he suffers a precipitous drop in blood pressure. I warn you that such an individual is probably suffering from inadequate blood volume. In the younger patient it probably will gradually be corrected, for his physiologic compensatory mechanisms are quite resilient, but in the older patient it can be catastrophic. A hemoglobin level taken in an elderly patient is often within the normal range, but what the surgeon may forget is that a hemoglobin level or a hematocrit reading is actually only a measure of the concentration of these elements in the total blood picture. A patient can gradually adjust himself to a diminished blood volume, but with rapid blood loss at operation, he will be unable to compensate effectually. Elderly patients tend not to eat an adequate diet or to drink enough fluids, and usually have a relative hemoconcentration. With a superimposed malignancy, a pyloric or intestinal obstruction, or some other serious problem, one can be certain that a diminished blood volume will result. It sometimes happens that when such a patient has been given a 500 ml. blood transfusion and the hemoglobin level is re-checked, it has been changed either not at all or only slightly. In actuality, from a practical standpoint, when the blood volume is adequate a 500 ml. blood transfusion will raise the hemoglobin level by 1.5 Gm./100 ml., and the hematocrit by 3-6 per cent. A patient whose level does not change, or changes only slightly, is obviously in need of more than one blood transfusion. The time to correct that deficiency is before operation and not at the time of operation, when a fall in blood pressure can result in a myocardial infarction, a cerebrovascular accident or a cardiac arrhythmia with arrest, or may even set the stage for a later pulmonary embolus. Such patients can be detected by measurements of blood volume, but such measurements aren't practical in every instance or at every institution. Consequently, it is up to the physician with a high index of suspicion to recognize these cases on the basis of weight-loss, washed-out appearance, history of poor diet and the type of lesion present. Then he can correct the patient's deficiency.

Flying Physicians' Association

The Flying Physicians' Association will hold its tenth annual meeting at the Riviera Hotel, Palm Springs, California, September 27 through October 2. The speakers will include representatives of federal aviation agencies as well as private physicians.

The 1,600 members, including about 37 Iowans, are prepared to fly anywhere within continental U. S. to provide medical aid in a major disaster, and their organization strives to upgrade the proficiency of all pilots. The requirements for membership are a medical license, membership in a medical society and a valid pilot's license. Dr. K. K. Hazlet, of Dubuque, is the Iowa chairman.

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Mercy Hospital Medical Day

Panel Discussion, and Questions and Answers

Dr. J. R. Schenken, Moderator: The speakers on my right and on my left have already addressed you, but I am sure they have a great many other things to say, if you will just ask questions of them. However, before giving them opportunities to answer your questions, I am going to ask each one to make a few preliminary remarks about some general problems in anemia.

By way of a preface, I can't help emphasizing to each of you the importance of having a classification that works for you. You needn't be wedded to any particular type of classification, and your scheme may be a very simple one. You can say, for example, that there are just two kinds of anemia. There is the type in which there is something wrong with the red cell, and the type in which there is something wrong outside of the red cell. That is a pretty rough classification, but it is accurate and it is inclusive.

The physician who is a little laboratory-minded and who likes to look at blood films usually approaches the problem from the standpoint of the appearance of the red cell itself. Is it a big cell? Is it a little cell? Or is it a cell that hasn't much hemoglobin? In other words, is the case under investigation a macrocytic, a normocytic, a microcytic or a hyperchromic type of anemia? From then on, the different kinds of anemias fall into that sort of classification.

Then there is the clinical or etiologic view, which you might adapt to your own purposes. It resembles the automobile manufacturer's standpoint. Are the raw materials present? Is there enough iron? Is it being absorbed? Is there an excess use of iron, etc.? Are the production and management right? In other words, are there the necessary B_{12}, folic acid, etc. to get the job done? Is the plant efficient—in other words, does the bone marrow do its job in the production of red cells? Dr. Ziffren has pointed out that the body produces one per cent of the total number of red cells every day because that is the share which it normally loses. Finally, what are the road hazards? Are the red cells living long enough, or are they wrecked before living out their normal span of 100 days?

No matter which of these classifications you use, it must be a useful one for you. It has to be clear, and it has to be simple. Then the next thing you have to do is to get yourself some norms—some standards—by which to decide what anemia is. I'm going to start with you, Dr. Koszewski. Would you mind summarizing the clinical signs that you look for in an anemia suspect, or tell us how you first are led to suspect that a patient has an anemia?

CLINICAL EVIDENCE OF ANEMIA

Dr. B. J. Koszewski: I think the patient usually gives us a clue that he has an anemia. Such a person is tired; he finds it difficult to live; he is short of breath; and he is just disgusted with the world. Pallor is also important. We can't always see it by looking at his face, but it becomes obvious when we get him to stick out his tongue. This is a very good method of diagnosing anemia clinically.

Dr. Schenken: Children, Dr. Dunphy, especially infants, don't tell you that they are tired, and they don't have complaints of shortness of breath after climbing several flights of stairs. What do you look for in children that may indicate a blood-destruction or anemia problem?

Dr. Donal Dunphy: We too look for pallor, and this pallor may include the mucous membranes and the tongue. Yet in children this may often be misleading. A child's peripheral circulation may be such that he appears pale, and yet he may actually have an adequate hemoglobin. Thus, we would err in overdiagnosing, perhaps, on the basis of pallor.

We look for dietary history that may tell us whether the patient is potentially anemic, if not actually anemic. I refer, of course, to the child whose sole dietary intake, at 10 or 11 months of age, is milk. Thus the history and the physical appearance of the child are two good indications. A third sign is a failure to thrive. Such a youngster has experienced a rather poor weight gain, and perhaps has failed to reach developmental

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Dr. Schenken is head of pathology at the University of Nebraska College of Medicine, and pathologist at Nebraska Methodist Hospital and Children's Hospital, Omaha.

landmarks on time. These include not only growth but also stages of development marked by an ability to sit, to roll over, etc.

LABORATORY MEASUREMENTS

Dr. Schenken: We may suspect anemia in an adult or in a child, but we must measure it objectively. Dr. Davidsohn, what are the findings that would lead you to say that a patient is anemic? What are the margins of error in our present methods?

Dr. Israel Davidsohn: The accuracy of laboratory tests in general has concerned pathologists for years. The development of what we call "quality control" has reached very high levels, especially in the clinical laboratory. We haven't progressed so far in the hematology laboratory, but if one goes back in the literature, he finds that attempts were made long ago to establish some rules—very long ago, even before the term *quality control* was known, or at least had been introduced into medicine.

The three main tests used in the study of anemia are the red-cell count, the hemoglobin measurement and the hematocrit determination. Of course we are using others such as the reticulocyte count, in order to find the functional capacity of the bone marrow. Of these three tests, the erythrocyte count is the most subject to error. The main reason for this is that we are using an extremely small sample of blood. In chemistry, we have learned to recognize the danger of using small samples, and we have developed a special technic —microchemistry. But the counting of red cells goes back to the Frenchman, Ehrlich. From that time, so long ago, we have been using a very small sample in that test. Consequently, in recent years, we have concluded that it is much safer to use a hematocrit determination, which is relatively free of error, provided one has an efficient centrifuge. It gives all of the desired information, except possibly the so-called corpuscular constants such as mean corpuscular volume, etc. For that measurement, we need a red count.

In hematocrit determinations, one can reduce error to a minimum. Next in the accuracy of determination is hemoglobin measurement. A cyanmethemoglobin standard probably makes is sufficiently reliable. For the past six or seven years, this method has been giving us more regularly reproducible results than we ever were able to obtain before. After one has taught his technologist to do the test properly, to employ proper controls and duplicate tests, and to use standards that one can obtain commercially or develop for himself, he can reduce error to approximately ±0.4 Gm.—in other words, to just a little bit less than one gram. With modern methods and with cyanmethemoglobin value standards, I think one can safely say that a hemoglobin difference of more than one gram is significant. At the present time, a variation of that size or larger isn't just a random result.

That is as far as we can now go in the determination of anemia, but one has much better and much more stable results nowadays than were available just 10 years ago.

Dr. Schenken: You conclude, then, that in the hands of the average person, the hematocrit is by all odds the most accurate determination; that the hemoglobin determined by the cyanmethemoglobin standards is second; and that the red blood cell count is third most reliable, despite the fact that we have electronic equipment to measure it with, the Coulter counter.

Dr. Davidsohn: With electronic equipment, even the red-cell count is much more reliable than it used to be, provided that one uses the procedures which have been generally recognized as a part of "quality control." Even in the red-cell count, the error can probably be reduced to approximately ±200,000. But still, the physician has to recognize that there are definite limits to accuracy and reproducibility. If one day he finds a count of 4,400,000 and on the next day the count is 4,700,000, he shouldn't conclude that something radical has happened to his patient, for there are many things that can have happened outside the laboratory. The patient's status changes from day to day. His degree of hydration may change. The technic in obtaining the sample can be a factor. The time that elapses between getting the sample and performing the test, even under the most favorable circumstances, can make a difference. Thus, we must recognize that certain sources of error are unavoidable. In the modern laboratory, we are now doing the best that can be done in this respect.

INDICATIONS FOR TRANSFUSION

Dr. Schenken: I have several reasons for fussing a bit about the accuracy of these methods for determining that a patient does or does not have anemia. First, a diagnosis of anemia can touch off a long series of expensive and possibly needless investigative procedures. Second, and worse still, it may trigger an order for transfusions—transfusions, let us say, for relatively simple operations for which transfusions should not be given.

A few years ago there was an article in the SATURDAY EVENING POST in which one of our colleagues —a colleague, at least, of Drs. Coleman, Davidsohn and me—was quoted as saying that over 30 per cent of the transfusions given in the United States were one-unit transfusions, and that none of them were justified. Now, I don't agree with the judgment that *none* of them were justified. Certainly there are instances of inadequate blood volume, and the example which Dr. Ziffren has cited, of the older person who suddenly has what seems to be a vascular collapse, is a good one. Yet, transfusions shouldn't be undertaken lightly.

Dr. Ziffren, just what are the indications that

you follow in ordering blood to be in readiness before surgery?

Dr. S. E. Ziffren: We see such statements in the medical literature and in the surgical literature. Actually, when surgeons write about single transfusions, amazingly, they don't hesitate to give a patient a transfusion on the operating room table if they think he needs it, despite the fact that it is far more dangerous to give a patient a transfusion while he is under anesthesia than when he is awake. When he is asleep, the indications of a transfusion reaction may be minimal, whereas when he is awake and conscious a catastrophe can sometimes be averted.

Actually, however, the incidence of transfusion reaction is quite small. At least it is at our institution, and I trust that it is in other places. I think what sometimes happens is that the possibility of a medicolegal action distorts all judgment in this regard.

You can rest assured, as I said earlier, that when an elderly patient must undergo a major procedure, his appearance and even the results of your blood studies on him are often deceptive. He may look well, even if he hasn't eaten and drunk adequately. These patients have compensated for these deficiencies, and they look well. A hemoglobin measurement may show 12 Gm., and a hematocrit may be 40 per cent, but they are very misleading items. What has happened, of course, is that there has been a hemoconcentration. Occasionally, I admit, a patient has compensated by increasing his plasma volume. But whenever one is suspicious of hemoconcentration in a patient and has secured an adequate history, I feel very strongly that he should be given a blood transfusion if he is to undergo major surgery. Let me cite a specific example. Only last week I had a patient with a cancer of the stomach who I knew had not been eating well. Despite the fact that she had come in with a hemoglobin of 11.5 Gm. we gave her two blood transfusions, and her hemoglobin was still 11.0 Gm. Two more transfusions raised it to 12.5 Gm. Even then, when she was on the operating table and shortly after we had started resecting her stomach, the anesthetist told me her pulse rate was rising and her blood pressure was falling. Only then did I realize that we still hadn't given her enough blood.

Someone has asked me about the method we use for routine determinations of blood volume at S.U.I. We have a very good machine called the Volemetron, which uses radioiodinated human serum albumin. It is fairly accurate, provided (1) that you don't spill any into the tissues and it is all mixed in the blood and (2) that your estimated weight is correct in calculating the proper blood volume and this depends upon the technician's judgment.

A valuable clue that I forgot to mention is that if you take the patient's blood pressure and his pulse rate while he is supine and then if you have him stand up, his blood pressure may fall and his pulse rate may rise. That is another indication of a diminished blood volume.

The patient's general appearance is significant. What is the status of his skin turgor? Is he well hydrated? Ordinarily, you will find that he is not, and if you correct his hydration, let's say by means of an intravenous injection of glucose and saline, so that he really becomes hydrated, you will find that his hemoglobin level is much lower than it was before hydration.

All of these facts must be taken into consideration. I feel very strongly that, especially in an older patient, one should never run the risk of incurring a myocardial infarction or an arrhythmia on the operating table because of hypovolemia complicated by blood loss and be forced later to tell his family, "He is doing fine, except that we think he may have had a heart attack on the operating table." A statement of that sort is a flimsy excuse for our own deficiencies. I have been as guilty as anyone else in this respect, but I think this is one of the tragedies that can be prevented from occurring in the operating room.

Either we are not aware of the problems that can arise, or we are afraid to face them. We say, "I don't want to give the patient a transfusion. He might have a reaction." Well, he might, but a severe transfusion reaction occurs in no more than four or five in over 11,000 transfusions a year at our institution. I think that is a wonderful figure. I hope that low transfusion reaction figures are common over the country. For the surgeon there is no substitute for blood in preparing a patient for operation.

Dr. Koszewski: I think we must recognize, nowadays, that blood is a product that deserves special consideration, for we can't yet manufacture it. We also must recognize that hepatitis is a complication of blood transfusion. It is less frequent when one gives whole blood than when one gives plasma, but still it is a factor to be considered.

I must also reemphasize what Dr. Davidsohn said about autoimmunization by blood transfusion. It is not only a danger to the red cells, but to the leukocytes and platelets. I agree that one unit of blood usually does not immunize the patient, but it may, and if he gets another transfusion 10 or 15 years later, he may have a severe reaction.

Really, one blood transfusion will change nothing as far as the blood volume is concerned. Dr. Ziffren mentioned giving four of them, and I think everyone is justified in doing so, but by giving just one we can incur hepatitis or possibly immunize the patient, and I should strongly advise against it.

Dr. Schenken: In this connection, I might mention a couple of little experiments that we undertook. First, we made an analysis of the one-unit transfusions at our hospital. We found that they ac-

counted for 18 per cent, and I don't think that is too bad a figure. Then we found that the majority of them had been given by surgeons, and when we went further and referred to the charts, we found that the majority of these had been given in the anticipation of having to give two or three. When one had been given, the surgeons had weighed the situation and had found out that a second wasn't necessary. I thought this made sense. Do you agree, Dr. Ziffren?

Dr. Ziffren: Very much so.

Dr. Schenken: I also agree with Dr. Davidsohn that there is quite a difference between these that we have been talking about and the "cosmetic" transfusion, so to speak, that is precipitated by the large number of bright-red sponges. Actually, this is what led to our second experiment. We took 150 cc. of blood, and sopped up a bunch of sponges, laid them all over the floor of the operating room, and then called in 15 different surgeons. We asked them, "How much blood did the patient lose?" and were given estimates ranging all the way from 150 cc. to five pints of blood. The point I wish to make is that the transfusion is the "panic button" in surgery. Incidentally, an important question that we still haven't answered very well is how much blood loss a patient actually suffers during a surgical procedure.

SENSITIZATIONS

There is one problem, Dr. Dunphy, that is manifested sometimes by jaundice, sometimes by hemorrhages in the skin, sometimes by hydrops, and sometimes, perhaps, by anemia. It is ABO- or Rh-sensitization in a child. The anemia is an extremely important part of the problem in many cases, however, especially in the mild ABO's or Rh's. Please outline briefly what you think are the *bona fide* indications for exchange transfusion in such cases, since we are trying not only to get rid of the patient's antibodies and his bad red cells, but also to correct his anemia.

Dr. Dunphy: Before I go into that matter, I'd like to comment—perhaps to jump in where I don't belong—regarding the single transfusion. By a single transfusion, I suppose you mean 500 cc. of whole blood. We do a great many transfusions with less than 500 cc. One type of patient in whom we often don't complete our attempt at correction is the child with iron-deficiency anemia, whose blood level when we first suspect difficulty is at a critical level, i.e., having a hemoglobin of 5.0 Gm. or less. We are inclined to transfuse up to 6 or 7 Gm. of hemoglobin, and then to allow their own marrows to take over and correct the remainder of the deficiency, with some assistance from iron therapy. This, perhaps, would be one exception to total corrective therapy.

The question that I have been given is not an easy one, for in cases of ABO- or Rh-sensitization we really have a two-fold objective. One purpose is to correct the anemia. This can be done by a number of small transfusions, and as you know, that was for a long time the method of treatment for erythroblastosis. Unfortunately, it didn't correct the serious problem of kernicterus. Subsequently, a corrective transfusion was used in an attempt to remove the bilirubin that the infant could not conjugate for excretion in the early days of life. We have now resorted to the exchange transfusion, and this has really been quite successful. There isn't time for an extensive discussion, but we can rate these two things. The anemia is no longer a major problem. The principal question is when to correct or when to embark on an exchange transfusion for the purpose of controlling the hyperbilirubinemia. Our difficulty is that at present we don't have a satisfactory method of measuring bilirubin.

An interesting article, not too long ago, told of a group which treated babies in two hospitals and suddenly discovered that half again as many exchanges were being done at one of those institutions. Upon careful study, they found that the methods of bilirubin determination really weren't comparable. One hospital was consistently reporting slightly higher levels than the other. So accuracy of measurement is part of the problem that we face.

In general—and I think the evidence is fairly good for our view—we don't like to have the bilirubin level rise above 20 mg. per cent before embarking on an exchange transfusion. Perhaps even more important is a good history of sensitization as the result of a prior transfusion—say for an appendicitis or something of that nature when the surgeon felt it was necessary to transfuse the mother. She is now sensitized, and we see her in her first pregnancy with an erythroblastotic infant. We hope this problem has pretty well disappeared, but occasionally one sees a patient who falls into this category. In these patients, we anticipate trouble in the first pregnancy, and we want to follow them by means of various prenatal hematologic procedures. Realizing that these are limited, we then follow with a cord bilirubin, and if the cord bilirubin is over 5 mg. per cent, we anticipate the need for an exchange transfusion. Or if the cord bilirubin is not over 5 mg., but the hemoglobin is 14 Gm. or less, we still anticipate doing an exchange transfusion.

With a hydroptic baby such as you mentioned, there would be no question. We would want to transfuse and exchange that baby as rapidly as possible and as promptly as we could get set up for it.

I think the difficult cases to decide about are not the clear-cut cases of erythroblastosis or the clear-cut ABO-sensitizations, but the so-called hyperbilirubinemias of the premature, in whom the bilirubin gets up around 22 or 26 mg. per cent on the fifth or sixth day of life. I don't know that

we have a really satisfactory answer. We vascillate. If the baby is a female and is very vigorous, and if the serum albumin level is good, we may temporize and not go ahead with the exchange. On the other hand, if it is a male and not a very vigorous baby, and if the serum albumin is low, we perhaps are a little more inclined to go ahead at a lower level and to exchange the baby earlier.

I don't think that we shall have a completely satisfactory answer clinically until we discover two things: (1) a very precise measurement of bilirubin, and (2) perhaps an even better measurement of bilirubin-binding capacity.

IRON THERAPY

Dr. Koszewski: My first question is: "In a marked or moderate anemia, is a trial on iron therapy ever contraindicated?"

It is contraindicated in hemolytic anemia because iron-absorption is tremendously increased in all anemias. The best stimulus for iron absorption is the lack of oxygen in the anemia. The iron extraction from the gut is increased three, four or five times. Instead of having the normal threshold of 20:1, you may have a level of 5:1. In other words, from five milligrams of iron, one milligram would be resorbed. I should say, however, that with the availability of bone marrow aspiration and of the Prussian blue method F, which is very easily done in any laboratory, you can diagnose an iron deficiency very simply.

Clinically, the patient with iron-deficiency anemia is the one who is the most dyspneic. Patients who have it are really more dyspneic than anemic. These individuals have a lack of cytochrome and other respiratory enzymes.

Even if I haven't had an opportunity to do a bone marrow, and to do an iron stain on the bone marrow, I have no hesitation in giving iron to a woman who is still menstruating, for there always is a possibility for her to excrete excess iron. However, to a man or to a woman who is already in her change of life, or after her change of life, I am very careful in giving iron because there is no method by which they can excrete the excess.

Our other problem is to calculate the amount of iron to be given. If you want to use iron empirically, because you think the case is one of iron deficiency you must restrict the dose to a definite period of time. You should calculate the amount as we do for parenteral therapy with intravenous or intramuscular iron. So if you want to experiment and if you think you will not hurt the patient, you still have to remember to set a limitation as to time. Cases of secondary hemochromatosis have been described in hemolytic anemia patients who had been getting iron for 20 years. Now that is just inexcusable. If you want to give iron, at least limit the administration to three weeks—or to four weeks—and see whether the patient is improving.

TREATMENT OF BONE-MARROW DEPRESSION

I also have a question with regard to the treatment of bone-marrow depression secondary to the use of drugs.

That is a pretty tricky question. I assume that I am not to talk about the hemolytic type of anemia caused by such drugs as chloroquine and the like, for cases of that sort never come to the depressive stage of the bone marrow. However, if one speaks of bone-marrow depression due to the use of benzol or Chloromycetin, he must differentiate between the treatment of an acute stage and the treatment of the chronic stage.

In the acute stage we have toxic-hemolytic anemia, leukopenia and thrombocytopenia. Fortunately, the red cells are not the problem. They have a long survival, and can be easily replaced by transfusion. The treatment of bone-marrow depression is the treatment of bleeding and the treatment of infection. The bleeding is due to a depression of platelets and damage to capillaries. The patient is prone to infection. So for bone-marrow depression at this stage, if hemolytic anemia is very marked and if you have good reason to think it is of the toxic type, the treatment consists of blood transfusions. You always use antibiotics, and you try to use cortisone cautiously, just to diminish the bleeding tendency. A chronic condition varies from an acute one for there often is no anemia. There remains a weakness of the bone marrow, and these patients may remain leukopenic for many years. So the problem here is more of infection than of anemia. We must remember that these people are very susceptible to infection, and that we must cover even the slightest infection with antibiotics.

THROMBOCYTOSIS FOLLOWING SPLENECTOMY

Dr. Ziffren: My question is: "What is the experience of the panel in problems of thrombocytosis and infarction following successful splenectomy? Is anticoagulation then of value?"

I have never known a patient to infarct an organ or to get a thrombosis following a splenectomy. The books ordinarily say—or at least one of them says—that with a platelet count of 750,000, the patient should be anticoagulated. Another author says the critical number is 1,000,000. From what I remember and from what I have seen, heparin is the drug that is advised.

I had one experience last year with a doctor. Of course you know that everything happens to a doctor on whom you operate. He had a splenectomy, and his platelets kept rising until they reached the level of 2,500,000. He was finally treated with Leukeran. Anyway, we gave him heparin and he did not thrombose anything. So I don't know whether thrombosis ever occurs. Perhaps it occurred on a single occasion, and everyone since

then has kept copying what someone said about that single case in the literature.

Dr. Davidsohn: I have seen many patients, after splenectomy, who had very marked increases of platelets—to well over 2,000,000—but nothing happened. I am familiar with the recommendation for anticoagulants, but of course there is always a danger about the amount of heparin one can give to a patient and over what period of time. I think this complex is entirely empirical, and I don't see that there is any theoretical basis for it.

Dr. Schenken: I endorse both comments. I have had to work occasionally with one of the Omaha surgeons on a series of idiopathic thrombocytopenic purpuras with splenectomies. In many of those cases there were very large and sharp rises. There was only one patient, however, in whom we suspected that there might have been a small infarct, in a lung, but after all, it could have come as a postoperative complication not necessarily related to the thrombocytosis.

MORE ON EXCHANGE TRANSFUSIONS IN NEWBORNS

Dr. Dunphy, I am going to ask you at least one more question. You stated that the bilirubin level of 20 mg. per cent can arbitrarily be taken as an indication for exchange transfusion. I should like you to discuss the question of timing in such cases. From the laboratory standpoint, an ABO- or Rh-sensitization is an emergency, and if the history is there, if the possibility of sensitization is there, I think that from a laboratory standpoint we must decide to transfuse as soon as possible, rather than wait until the next morning. Suppose you found a bilirubin of 12 to 14 mg. per cent no more than 24 hours after birth. What would you do in such a case?

Dr. Dunphy: I am sorry. I didn't mean to give the impression that we would wait until the bilirubin level reached 20 mg. per cent before doing an exchange. I didn't mean to set 20 as the real deadline for exchange. I believe that a group in Boston pointed out that kernicterus—the pigment-staining of the brain or severe cerebral palsy, the so-called post-erythroblastotic syndrome—was unusual if the bilirubin did not rise to 20 or above.

Our indications for an exchange would be based as much, for example, on the mother's history. Let us say a mother has had three children, each of whom has shown an increased difficulty. We would anticipate exchanging her fourth baby, probably within the first few hours after birth, unless we had evidence that the father was a heterozygote, that the woman had remarried, or something else of that sort which might give us pause for thought. We would very carefully follow a baby in whom we were undecided as to whether or not to exchange.

In a case of fetal hydrops, we would plan to exchange as an emergency. In other babies, we would consider that the initial laboratory values constituted emergencies. We would never fail to monitor a baby like this every four to six hours. If, let us say, the bilirubin in the cord had been 3.8, and then six to eight hours later it had risen in the baby and was up to 8, we probably would anticipate making the transfusion and would do it at a convenient hour, rather than, let's say, as a midnight emergency.

Dr. Schenken: Will you have the last word here, Dr. Davidsohn?

Dr. Davidsohn: I don't know whether it will be the last word qualitatively, or just chronologically, but I want to take a moment to discuss the indications for exchange transfusions in a baby with fetal erythroblastosis. In the first place, the magic number 20, which was introduced by Shaw and Downing some years ago, is a pretty good figure to go by. Yet sometimes it is better to use the criterion that we have found practical and to do a bilirubin determination after a shorter period, for example after six hours. One doesn't have to wait until the next day. An increase of more than one milligram per hour, in my opinion, is an indication of dangerous destruction.

Dr. Dunphy has been critical of the methodology of bilirubin determination. That is a very important point, for it is a micromethod, and every slightest error is multiplied by the smallness of the sample. This is where quality control is extremely important. In doing repeated tests, we remove some of the danger of the bad method, for what we actually are concerned with is the progressive increase.

Another thing is important. A baby is born. A study made during the prenatal period has shown that the mother has a rising titre of antibodies. There may be a bad history, but we now have a baby with a hemoglobin of 16 who shows no evidence of jaundice. What do we do in such cases? These are the very dangerous ones, for these are the cases of latent fetal erythroblastosis. Following the recommendations made by Alden, of Boston, we do a reticulocyte count. If the reticulocyte count is more than 15 per cent, these babies will invariably get into a very serious condition before 24 hours have passed. This, in our experience, has been a definite indication for an exchange transfusion.

Finally, or perhaps next-to-last, I believe that in ABO incompatibility, the situation is something entirely different. I think that we can delay our decision even to the level of 20 mg. when we are dealing with a fetal erythroblastosis due to an A incompatibility, since most of the time it is A, or indeed most of the time it is A_1 incompatibility.

Then, as Dr. Dunphy mentioned, there are the premature babies with so-called premature-jaundice-kernicterus disease. With them, our experience has been that one should be quite radical and should act promptly, particularly in the really pre-

mature—those weighing, let's say, in the vicinity of 3 or 4 pounds. In those babies, we have found that radical treatment saves the situation, because they are so sensitive to the toxic action of indirectly-reacting bilirubin.

Dr. Schenken: By the affirmative nodding of his head, I think Dr. Dunphy agrees with you, Dr. Davidsohn, so you two have had the last word together.

With this, I wish to thank Dr. Morrissey, Dr. Coleman and Dr. From, and to say that we have enjoyed talking to all of you.

Mercy Hospital, Des Moines

Clinicopathologic Conference

PROTOCOL

THE PATIENT FOR DISCUSSION today is a 20-year-old white female who was admitted to the hospital for menometrorrhagia. Her menses had begun in 1957, when she was at the age of 14-15 years, and had apparently been normal until four months later, when menstruation ceased. There was no further flow for five months, but then the patient had a week's heavy bleeding. It was followed by a week of spotting and then another episode of profuse vaginal bleeding occurred. She was seen by her physician, in her home town, and he reported that on physical examination the patient was very pallid, weak and frightened. She was afebrile. Physical examination was essentially normal except for the vaginal vault and the cervix. The vault was filled with dark blood clots. The hymen was intact. The cervix was 2+ enlarged and very soft. The cervical os admitted an examining finger. The body of the uterus was enlarged, soft and boggy.

A dilatation and curettage was performed after consultation had been obtained. The microscopic description was "hyperplasia of the endometrium of the swiss-cheese type." Bleeding continued to be profuse and irregular.

The patient was referred to the Endocrine Laboratory at University Hospitals, Iowa City, in June, 1958. There, no significant endocrine abnormalities were observed. Endometrial biopsies on two occasions showed proliferative endometrium. Laboratory studies on the patient, including a urinalysis and hemograms, were within normal limits.

She was put on an experimental progestational agent (SC-9022) for five days, but continued to bleed. Testosterone proprionate, 100 mg./day, was given for three days, and the bleeding subsided. She was placed on iron and cyclic stilbesterol therapy, and this was continued for one year.

In 1959 excessive bleeding again occurred. The 17-ketosteroids were 8.22 mg./24 hrs., with a ratio of 5.37 mg. per gram of creatinine. Gonadotropic hormones were not detectable. Papanicolaou smears of the vagina and cervix were negative for malignant cells. The patient had anemia, the hemoglobin being 11.8 Gm., the hematocrit 39 volumes per cent. Progesterone was added to the hormone therapy. The menses were then moderate to slightly heavy. Because she took her medication incorrectly she was directed by her family physician to stop treatment.

During the same year, the patient's seventeenth, a dilatation and curettage was performed, and again there was hyperplasia of the endometrium.

At the age of 20, she again developed continuous vaginal bleeding, and another dilatation and curettage was performed on August 1, 1962. The endometrium obtained was abundant, and microscopic examination revealed hyperplasia with early adenocarcinoma *in situ* and areas of squamous-cell metaplasia. Because of the age of the patient, microscopic slides were sent to several consulting pathologists. The diagnoses of the consultants varied from "adenomatous endometrial hyperplasia with anaplasia" to "adenocarcinoma and adenosquamous carcinoma." Recommendations for treatment varied from conservative management to immediate hysterectomy and bilateral salpingo-oophorectomy.

Several of the consultants suggested that the patient might have the Stein-Leventhal syndrome and that the endometrial changes might be secondary to this syndrome.

The patient was discharged from the hospital, only to return a month later for another dilatation and curettage and a laparotomy. The laparotomy was performed to determine whether a Stein-Leventhal syndrome was present or not. The operating surgeon stated that the uterus was normal in size and shape. The left ovary had been replaced by a

large cyst measuring 6 to 7 cm. in diameter and having a normal appearance except for "an absence of convolutions." The cyst from the left ovary was removed, and a wedge resection was performed on the right ovary. The endometrium again showed hyperplasia. The wedge from the right ovary showed multiple follicular cells and remnants of the old corpus luteum. The cyst from the left ovary was a lutein cyst.

Laboratory studies performed during this admission revealed an essentially negative urinalysis and a microhematocrit of 33 volumes per cent. The absence of a Stein-Leventhal syndrome raised a question as to whether a hysterectomy should or should not be performed on this patient. Because of her youth, and the absence of neoplastic changes in the last endometrial scrapings, a period of observation was decided upon.

Approximately six months later, another curettage was performed, and the endometrium was again reported as showing endometrial hyperplasia with focal areas of carcinoma *in situ*. Extensive hormone studies had been performed and were reported as follows:

24-hour urine volume—1,950 ml.

	Patient	Normal
1. Follicle-stimulating hormones		
(a) 5 mouse units	Negative	Positive
(b) 50 mouse units	Negative	Positive/Negative
(c) 100 mouse units	Negative	Negative
2. 17-ketosteroids	12.5 mg./24 hrs.	5-15 mg./24 hrs.
3. Estrogens	5.9 mcg./24 hrs.	1-20 mcg./24 hrs.
4. Estradiol	3.3 mcg./24 hrs.	2-10 mcg./24 hrs.
5. Estriol	22.6 mcg./24 hrs.	4.5-30.5 mcg./24 hrs.
6. Pregnandiol	0.7 mg./24 hrs.	0-8.0 mg./24 hrs.

A protein-bound iodine was 6.5 mcg. per cent. The 17-ketosteroid determination was repeated, and was slightly lower, being 8.7 mg./24 hrs.

A hysterectomy was decided upon, and it was performed on June 28, 1963, when the patient was 21 years of age. The uterus was normal in size, but roughening of the endometrium was noted on the anterior wall of the endometrial cavity, and multiple endometrial polyps and some luxuriant endometrial tissue were present at the left cornu.

CLINICAL DISCUSSION

Dr. Robert F. Valestin: Before I begin discussing this difficult case, I should explain that this is a clinicopathologic conference with a "deviation from the normal." As the discussant, I am not approaching this case as an "unknown." I know the patient's history and the so-called "final diagnosis." There are a number of things I don't know about her, however, and probably the most important of them are the "whys": Why did this young woman, while still in her teens and following a relatively innocuous menarche, develop periodic amenorrhea and menometrorrhagia? Why the atypical hyperplasia? And finally, why the endometrial carcinoma? You, ladies and gentlemen, might be asking yourselves why I should have been chosen to discuss this case in the first place. I suspect that Doctor Coleman knew that I would be asked very many questions, and thought that I might just as well present the initial discussion.

I first saw this patient when she was 20 years old. At that time she had been bleeding for approximately one month and was using between six and eight napkins each day. At the time of the dilatation and curettage, in June, 1962, large fragments of grayish-white endometrial tissue were obtained. We were immediately suspicious that the patient had more than a simple hyperplasia. After the tissues had been examined microscopically, we were more troubled, and our concern was heightened when we were informed of the consultants' diagnoses. To make matters worse, of course, the patient was a student nurse at this hospital, and we had to face her every day.

We had to choose one of several methods of treatment:

1. A radical approach, with hysterectomy and bilateral salpingo-oophorectomy, or
2. A conservative approach, with further diagnostic procedures to determine, if possible, the etiology of the bleeding, or
3. A stand-by, wait-and-watch approach.

We discarded the third, hoped that the first would not be necessary, and proceeded along a conservative avenue. During that period hormone studies were carried out, and subsequently an abdominal laparotomy.

Dr. Frank C. Coleman: The interpretation read as follows: "There is no evidence of adrenal cortical hyperplasia. The normal estrogenic activity in the absence of measurable quantities of pituitary gonadotropin hormone activity is consistent with pituitary suppression from prolonged increased follicular activity of the ovary. Such changes may be seen in the Stein-Leventhal syndrome. Similar changes may also be seen in estrogen-producing tumors of the ovary, especially thecoma and granulosa cell tumors. The progestin production is within the normal range."

Dr. Valestin: If my memory is correct, that consultation note contained the first mention of the Stein-Leventhal syndrome. When the consultant pathologists subsequently considered such a possibility, it was decided to continue the investigation, and a dilatation and curettage and an abdominal laparotomy were performed. The uterus was of normal size and shape, and in third degree of retrodisplacement. The left ovary had been completely replaced by a cyst, and measured approximately 7 cm. in diameter. It was subsequently shown to be filled with dark blood. The right ovary was of normal size, but it was gray and smooth-surfaced, with a complete absence of convolutions.

The left ovary was excised. A wedge resection of the right ovary was then performed.

The findings were not typical of the Stein-Leventhal ovary, and there was no evidence of tumor. Nevertheless, because so much stress has been placed on the Stein-Leventhal syndrome, I think that we should discuss it, at least in brief. In 1934, Drs. Stein and Leventhal, of Michael Reese Hospital and Northwestern University Medical School, Chicago, presented a paper at a meeting of the Central Association of Obstetricians and Gynecologists, in New Orleans, entitled "Amenorrhea Associated with Bilateral Polycystic Ovaries." The paper was subsequently published in the AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY for February 1935. They reported seven cases in which amenorrhea associated with bilateral polycystic ovaries had been unsatisfactorily treated with estrogenic hormone. Surgical treatment consisting of wedge resection of the ovaries had later proved successful, with restoration of normal menses in all patients. Pregnancy occurred afterward in two patients. It was their opinion that the ovarian changes had been the result of hormonal rather than inflammatory factors, but that the amenorrhea and sterility had been symptoms resulting from mechanical crowding of the ovarian cortex by cysts, so as to interfere with the progress of normal graafian follicles to the surface of the ovary.

In their patients, Stein and Leventhal had found the ovaries bilaterally enlarged, and the contour was normal or distinctly globular. The cortex was thickened, and the tunica firm or fibrotic. Cysts beneath the surface were follicle cysts, and numbered from "twenty to one hundred" in each ovary. In size, they varied from 0.1 to 1.5 cm. Corpora lutea were small or absent. The uteri were normal or smaller than average, and firm. In patients with longstanding amenorrhea, the breasts were smaller than average, and firm. Some of them showed masculine escutcheons, hirsutism, usually normal external genitalia and no voice changes. At that time, the only "consistent pathologic finding was the presence of follicle cysts lined by theca cells." Stein observed that the condition develops, as a rule, *after* the patient had menstruated more or less regularly for some years, and therefore was not likely to be congenital.

Almost 25 years later, in presenting a paper on the Stein-Leventhal syndrome at a meeting of the Boston Obstetrical Society in February, 1958, Stein enlarged on his original definition. He stated, "The syndrome consists of a history of secondary amenorrhea and sterility, the finding of bilateral and symmetrically enlarged ovaries, and the excretion of normal amounts of 17-ketosteroids and follicle-stimulating hormone in the urine."

Approximately 50 per cent of patients have hirsutism, and an equal share have small breasts. According to Stein, 75 per cent of the patients have hypoplasia of the uterus.

The etiology is unknown. There is an apparent disturbance in the excretion of gonadotropin. Keettel and his co-workers, at Iowa City, believe that these ovaries are hypersensitive and respond to FSH administration by rapid enlargement. Holstrom incubated tissue slices from normal and polycystic ovaries with progesterone, and found large amounts of 17-hydroxyprogesterone from normal ovaries, but relatively large amounts of androgenic androstenedione from Stein-Leventhal ovaries. Lanthier and Sandor found that more androstendione was produced *in vitro* by polycystic ovaries than by normal ovaries.

Whatever the triggering mechanism, it is possible that an excess of androstendione gives rise to the inactive endometrium and masculinizing secondary sex characteristics. Clinically these patients are diagnosed by history, physical examination and hormone studies, and by visual methods such as gynecography, or pneumoroentgenography, culdoscopy, colpotomy and laparotomy. In our practice, given a patient in whom we suspect the Stein-Leventhal syndrome, we take endometrial biopsies at regular weekly intervals over a period of five to six weeks until we are satisfied that the patient has a persistent proliferative endometrium. Visually, we employ gynecography. Our treatment is surgical and only that.

Now, what about this patient? By history, her periods of amenorrhea were brief. There was no long-term normal menstrual history. Physically, there were no stigmata ordinarily associated with the Stein-Leventhal syndrome. The endometrial biopsies showed hyperplasia rather than proliferation. The ovaries were not characteristic. Then why the discussion? Occasionally patients with Stein-Leventhal ovaries have menometrorrhagia rather than amenorrhea, just as this patient did. The ovaries were not palpable or visibly enlarged. However, some authors do not believe that all Stein-Leventhal ovaries have to be enlarged to fulfill the criteria. Whether to call them by an eponym or simply "polycystic" was far removed from our minds when we were treating this patient. We were advised to consider this syndrome, and so we did.

I believe that at this point I should ask Dr. Coleman to present the pathologic findings in more detail.

PATHOLOGY DISCUSSION

Dr. Coleman: This case has been one of the most puzzling and probably one of the most challenging we have seen here at this hospital in the last several years. You might recall from the protocol that there was a wide diversity of opinion concerning the tissue removed at the initial dilatation and curettage here at Mercy Hospital a year ago. There was a diversity of opinion not only within our own group of pathologists but also among the consultants to whom we sent tissue slides. You

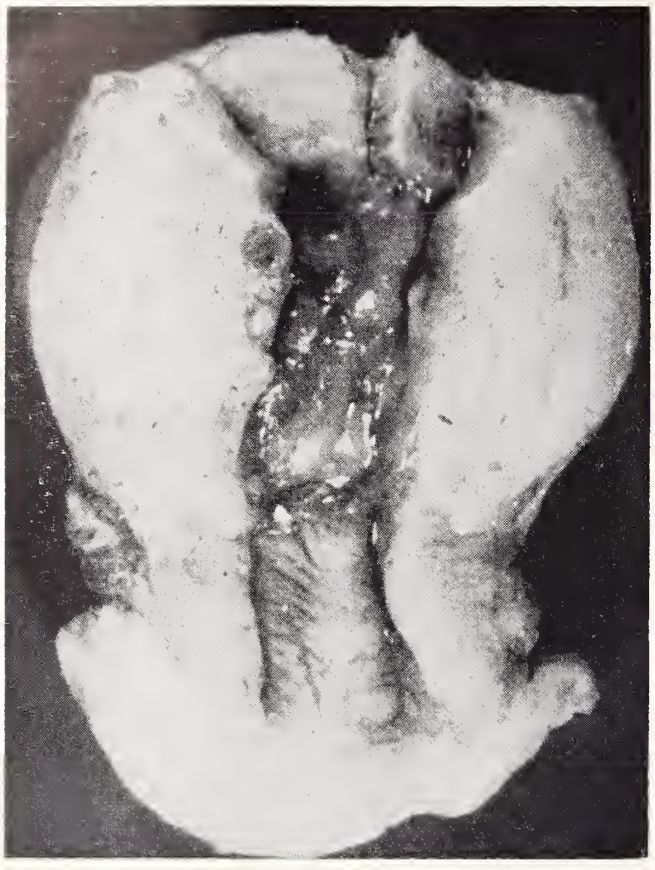


Figure 1. Hysterectomy specimen showing hyperplastic polypoid endometrium, especially at the left cornu. This is where the adenocarcinoma was located.

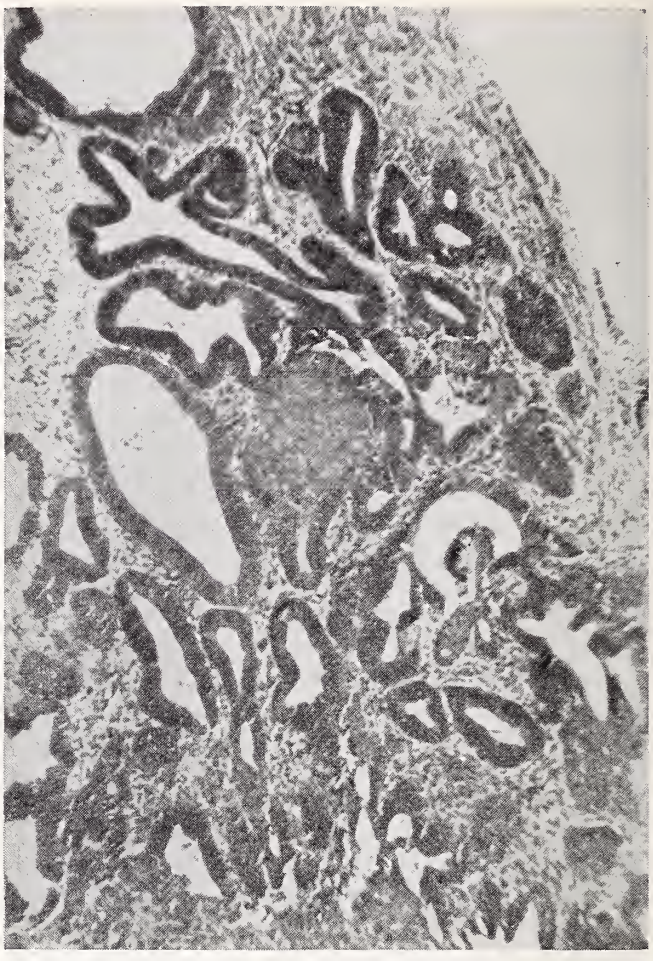


Figure 2. Photomicrograph of endometrium curettage specimen in 1962. Note focal areas of adenocarcinoma with adenoacanthomatous foci.

might be interested in hearing more about the opinions of the various consultants. Dr. Sheldon C. Sommers, pathologist at Scripps Hospital in La Jolla, California, was one of the pathologists to whom we sent slides. He is the co-author of a recently published text on gynecology and gynecologic pathology. He agreed that the tissue showed an unusual endometrial hyperplasia and wrote: "This picture usually accompanies a prolonged failure to ovulate, probably beginning at the menarche. The most common ovarian abnormality is polycystic, after which, in my opinon, solid hyperplasia with thecomatosis comes next, and functioning tumors of the ovaries are relatively much less common.

"If the patient does not evidently ovulate rather promptly and frequently after curettage, I think a laparotomy would be helpful, since if she has polycystic ovaries, the various types of surgical incision may cure the whole process, and if not, there is an opportunity to find out what her ovarian problem is." Dr. Sommers' diagnosis was adenomatous endometrial hyperplasia with anaplasia.

Dr. Malcolm Dockerty and two of his associates at the Mayo Clinic examined the slides. In their opinion, in addition to marked adenomatous hyperplasia, there were foci of grade 1 adenoacanthoma. "The patient is pretty young for endometrial cancer," he wrote, "but we have seen it several times in teenagers. The acanthomatous component would make us think of Stein-Leventhal changes in the ovaries, but granulosa cell tumor would be another ovarian lesion to keep in mind, as you suggest. In spite of her tender years, I see nothing short of a radical operation for this situation."

Dr. James W. Reagan, professor of pathology at Western Reserve University, followed a detailed microscopic description of the endometrial curettings by stating: "These changes, in my opinion, represent a marked atypical hyperplasia of the endometrium, and differ only quantitatively from changes relating to adenocarcinoma. I don't believe that the changes are confined to a polyp, but instead originate in a polypoid hyperplasia in the endometrium. Many features suggest anovulatory cycles in this patient.

"The changes are similar to those which we have observed in patients with Stein-Leventhal syndromes in this age group. Kaufmann and Wall reported on several atypical hyperplasias under these circumstances, in the AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY (77:1271, 1959), I believe. Andrews and Andrews, in the same JOURNAL (80:-

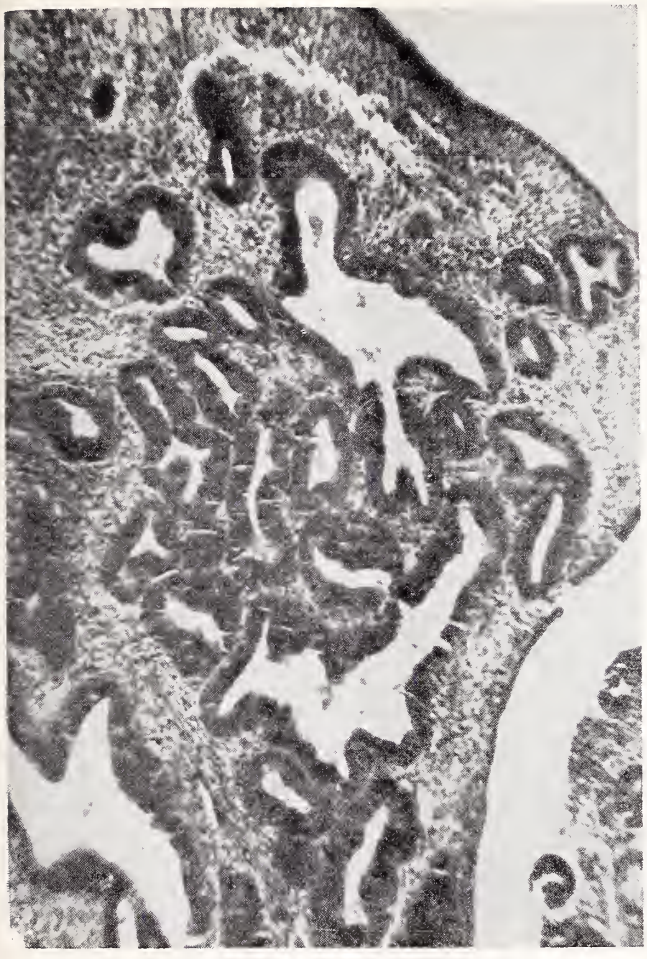


Figure 3. Photomicrograph of the endometrium hysterectomy specimen (S-63-2122, 6-28-63). Note focal areas of adenocarcinoma in polypoid hyperplasia.

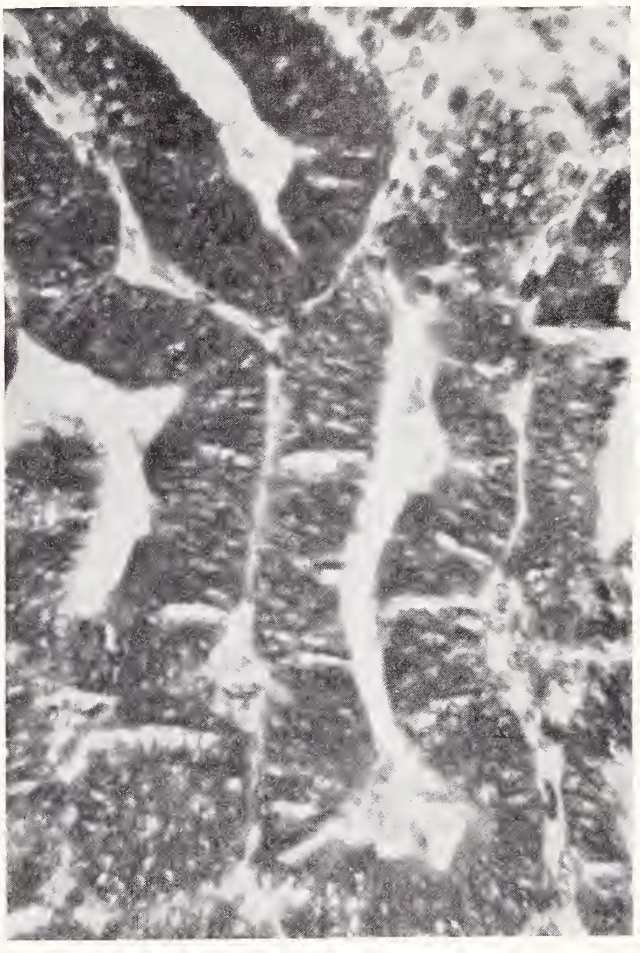


Figure 4. Photomicrograph of the endometrium hysterectomy specimen, high power. Closely packed acini of adenocarcinoma of the endometrium are shown.

632-636), summarized the cases with adenocarcinoma and Stein-Leventhal syndrome. Under the circumstances I would think that a Stein-Leventhal syndrome should be considered in this patient. While Kistner (CANCER, 12:1106, 1959) has reported on the endometrial response to synthetic progestins, I am not convinced that this is of proven value. In this case if there is any evidence to indicate Stein-Leventhal syndrome, this probably should be given consideration. A repeat dilatation and curettage probably should be done in the future, and if there is evidence of progression, I would feel that hysterectomy should ultimately be carried out. At present I would not recommend this."

Slides that had been sent to Dr. Arthur Hertig, Shattuck professor of pathologic anatomy, Harvard Medical School, were read in his absence by his associate, Dr. Hazel Gore. Four slides had been sent to Dr. Hertig, one from the dilatation and curettage of 1958, one from 1959, and two from the initial curettage at Mercy Hospital. Dr. Gore's opinion was that the 1958 slide showed proliferative endometrium with cystic and beginning adenomatous hyperplasia, that the 1959 slide showed proliferative endometrium with focal hyperplasia, and that the two Mercy Hospital slides showed adenocarcinoma with prominent adenoacanthomatous elements in some foci. She stated that the curettage seemed to be sufficiently deep to include some apparent muscle, and it seemed to her that the adenocarcinoma had invaded the muscle of the uterus. In her consultation note, she told of having recently seen adenocarcinoma in a 21-year-old girl with Stein-Leventhal syndrome. Moreover, she pointed out that Dr. Hertig had seen one patient who had had normal secretory endometrium with just one tiny proliferative polyp, and who a year later had developed adenocarcinoma on both anterior and posterior walls of the uterus.

Approximately one month later, Dr. Hertig sent an additional consultation note of his own. In his opinion, the 1958 slide showed a proliferative endometrium with some cystic glands and some slight adenomatous hyperplasia. The 1959 slide showed enormous sinusoids and solid nests of glandular cells, the degree of sinusoidal prominence suggesting estrogenic stimulation. The slides from Mercy Hospital showed undoubted adenosquamous carcinoma. In his opinion the portion of tissue con-

taining myometrium showed "most of the spectrum in the evolution of the malignant lesion." Elsewhere, he said, the curetted material revealed adenocarcinoma and adenosquamous carcinoma.

Dr. Hertig further stated: "I have carefully researched the material of four and three years ago, respectively, and in all honesty cannot find the earlier stages of this lesion. Nevertheless, the 1958 biopsy shows cystic and some adenomatous hyperplasia with foci of tightly crowded epithelium. This feature, so-called focal hyperplasia, is much more prominent in the 1959 biopsy. It may be significant that both the glandular and sinusoidal pattern changed while the patient was on stilbesterol therapy. Whether the stilbesterol caused the change is unknown. In spite of the patient's youth, she should have a hysterectomy and bilateral salpingo-oophorectomy. This case is in the general pattern of our experience, namely that we have never seen carcinoma develop in patients who have had perfectly normal endometrium within 13 years of developing a carcinoma, whether they have ovulated or not."

Considering these varied opinions, one can easily understand that the attending physicians were placed in a difficult position to determine: (1) the correct diagnosis in this patient, and (2) the indicated treatment. As I have said before, the members of our own department were about equally divided as to whether the lesion was carcinoma, or a still benign although atypical hyperplasia.

SURGICAL PATHOLOGY FINDINGS

Dr. Coleman: The specimen received following laparotomy was a uterus with the attached cervix together with a portion of the right ovary. The uterus weighed 103 Gm. and measured 9 × 6.5 × 1.5 cm. It was of average size. The external cervix was smooth, and the mucosa intact. The endometrial cavity was lined by a scanty amount of pinkish-red endometrium, not exceeding 2 mm. in thickness, generally. However, at the left cornu the endometrium was thicker, measuring 6 mm. and appearing ragged and dark red. The myometrium was of average thickness and unremarkable. The remainder of the specimen consisted of a single cystic structure, 1 cm. in maximum diameter, which was filled with cloudy fluid and contained a single irregular fragment of ovarian tissue, measuring 4 × 1 × 0.1 cm. Microscopically, the hysterectomy specimen showed chronic cervicitis with squamous metaplasia, and endometrial adenocarcinoma with focal areas of adenoacanthoma of the corpus of the uterus.

GENERAL DISCUSSION

Dr. Valestin: This patient made an uneventful recovery following her hysterectomy, and she has made an excellent emotional adjustment to her situation. Of course we are following her at regular intervals.

Dr. Kelly, intern: Would you follow the same course with this patient if you could start all over again?

Dr. Valestin: No, if I did it over again, I would do a hysterectomy on her when we got the diagnosis of adenocarcinoma, supported by the consultants' opinions of carcinoma.

Dr. Austin E. Schill: How many cases of adenocarcinoma of the endometrium have you seen in 20-year-old girls?

Dr. Coleman: This is the youngest patient in our series with adenocarcinoma of the endometrium. However, we are seeing increasing numbers of cases of carcinoma of the endometrium in women before the menopause. We are also seeing increasing numbers of cases of the Stein-Leventhal syndrome, but we have not seen one associated with adenocarcinoma of the endometrium.

REFERENCES

1. Holmstrom, E. G., cited in: Allen, W. M., and Woolf, R. B.: Medullary resection of ovaries in Stein-Leventhal syndrome. Am. J. Obst. & Gynec., **77**:826-837, (April) 1959.
2. Lanthier, A., and Sandor, T.: "In vitro" production of androgenic steroids by human normal and "Stein-Leventhal type" ovarian slides. Metabolism, **9**:861-864, (Sept.) 1960.
3. Keettel, W. C., Bradbury, J. T., and Stoddard, F. J.: Observations on polycystic ovary syndrome. Am. J. Obst. & Gynec., **73**:954-965, (May) 1957.
4. Kistner, R. W., and Smith, O. W.: Observations on use of nonsteroidal estrogen antagonist: MER-25; II. Effects in endometrial hyperplasia and Stein-Leventhal syndrome. Fertil. Steril., **12**:121-141, (Mar.-Apr.) 1961.

Page County Fall Meeting

Physicians are invited to attend the Page County Medical Society's Fall Meeting, which will take place at the Clarinda Country Club, Clarinda, on the afternoon and evening of September 23.

Registration will begin at 1:30, and the program will commence at 2:00 p.m. The presentations will be "Cutaneous Manifestations of Internal Disease," by C. E. Radcliffe, M.D.; "The Blood Vessels in Peptic Ulcer," by J. A. Gius, M.D.; and "Diagnosis and Management of Cerebral Vascular Disease," by Adolph Sahs, M.D. All three speakers are faculty members at the S.U.I. College of Medicine, Iowa City.

There will be a discussion of the papers, and a social hour and dinner following the meeting.

IMPORTANT NOTICE

IMS Fall Conference for County Medical Society Officers and Other Representatives—

Sunday, September 13, 1964
Hotel Savery
Des Moines

Coming Meetings

IN STATE

Sept. 13 — **IMS Fall Conference of County Medical Society Officers and Other Representatives,** Hotel Savery, Des Moines.

Sept. 13-15 — **Iowa Chapter of the American Academy of General Practice,** Hotel Savery, Des Moines.

Sept. 16-17 — **Pediatrics,** S.U.I. College of Medicine, Iowa City.

Sept. 19-20 — **Radiology,** S.U.I. College of Medicine, Iowa City.

Sept. 23 — **Page County Medical Society Fall Program,** Clarinda.

Sept. 25-26 — **Earlham Conference on Aging,** Earlham.

Oct. 2 — **Otolaryngology for the General Practitioner,** State University of Iowa College of Medicine, Iowa City.

Oct. 15-16 — **The Surgery of Trauma,** State University of Iowa College of Medicine, Iowa City.

Oct. 29-31 — **Arthritis Conference,** State University of Iowa College of Medicine, Iowa City.

Oct. 29-31 — **Orthopedic Conference,** State University of Iowa College of Medicine, Iowa City.

CONTINENTAL U. S.

Sept. 9-12 — **International College of Surgeons (North American Federation),** Chicago.

Sept. 10-11 — **Clinical Applications of Electronics in Cardiovascular Disease,** Rochester, Minnesota.

Sept. 10-12 — **American Association of Obstetricians and Gynecologists** (members and invited guests), Homestead, Hot Springs, Va.

Sept. 11-12 — **Conference on Diseases Common to Animals and Man,** University of Nebraska College of Medicine, Omaha.

Sept. 17-18 — **Conference on Voluntary Health Agencies,** Drake Hotel, Chicago.

Sept. 17-19 — **National Concer Conference (fifth),** Bellevue Stratford Hotel, Philadelphia.

Sept. 18 — **Infectious Diseases,** University of Kansas School of Medicine, Kansas City, Kansas.

Sept. 18-19 — **Obstetrics and Gynecology,** Lincoln.

Sept. 20-25 — **Michigan State Medical Society,** Sheraton-Cadillac Hotel, Detroit.

Sept. 21-25 — **Pulmonary Disease Seminar,** Fitzsimons General Hospital, Denver.

Sept. 21-25 — **Current Clinical and Laboratory Investigations in the Rheumatic Diseases,** National Institutes of Health Clinical Center, Bethesda.

Sept. 24-26 — **Electrocardiography in Infants and Children,** Henry Ford Hospital, Detroit.

Sept. 24-26 — **Clinical Orthopaedic Society,** Kahler Hotel, Rochester, Minnesota.

Sept. 26-27 — **Occupational-Health Congress,** Rice Hotel, Houston.

Sept. 27-Oct. 2 — **Flying Physicians Association,** Riviera Hotel, Palm Springs, Calif.

Sept. 28 — **Society for Pediatric Radiology,** Radisson Hotel, Minneapolis.

Sept. 28-30 — **Environmental Diseases of the Heart and Lungs,** Pick-Carter Hotel, Cleveland.

Sept. 28-30 — **Kansas City Southwest Clinical Society,** Hotel Muehlebach, Kansas City, Missouri.

Sept. 30-Oct. 2 — **Seminar on Diabetes and Related Endocrine Disorders,** Balmoral Hotel, Miami Beach.

Oct. 1-3 — **Colon,** University of Nebraska College of Medicine, Omaha.

Oct. 2-3 — **School Health,** University of Kansas School of Medicine, Kansas City, Kansas.

Oct. 5-7 — **Basic Mechanisms in Internal Medicine,** University of Southern California School of Medicine, Los Angeles.

Oct. 5-7 — **Fractures,** University of Colorado School of Medicine, Denver.

Oct. 5-9 — **Sixteenth Postgraduate Assembly of the Endocrine Society,** Mayo Clinic, Rochester.

Oct. 8-9 — **Sixteenth Annual Conference on the Kidney,** New York Academy of Medicine, New York City.

Oct. 8-10 — **American College of Physicians,** Hotel Biltmore, Los Angeles.

Oct. 12-15 — **Occupational Skin Problems,** University of Cincinnati, The Institute of Industrial Health, Cincinnati.

Oct. 12-16 — **The Physiological Basis of Internal Medicine,** Duke University Medical Center, Durham.

Oct. 15-22 — **Third Annual Conference on Research in Medical Education,** Denver.

Oct. 19-23 — **The Medicine of Tomorrow, Recent Advances of Immediate Clinical Interest in Molecular Biology and Other Basic Sciences,** University of Wisconsin Medical Center, Madison.

Oct. 22-24 — **Chiefs of Staff Conference,** University of Colorado School of Medicine, Denver.

Oct. 22-24 — **Course in Postgraduate Gastroenterology,** The Roosevelt, New York City.

Oct. 22-24 — **Modern Concepts of Nutrition and Heart Disease,** Mound Park Hospital, St. Petersburg.

Oct. 26-29 — **Omaha Mid-West Clinical Society,** Civic Auditorium, Omaha.

Oct. 26-30 — **Clinical Cardiopulmonary Physiology,** Continental Hotel, Chicago.

Oct. 29-31 — **First National Congress on Strokes,** Palmer House, Chicago.

Oct. 29-31 — **Seventeenth Annual Meeting Gerontological Society,** Leamington Hotel, Minneapolis.

Oct. 30-31 — **First National Conference on Health Education Goals,** Sheraton-Chicago, Chicago.

ABROAD

Sept. 19-26 — **International Federation of Gynecology and Obstetrics,** Buenos Aires, Argentina. Pres.: G. di Paola, Ira Catedra de Ginecologia, Hospital de Clinicas, Cardoba 2149, Buenos Aires.

Sept. 20-26 — **World Congress of Anesthesiology (third),** Sao Paulo, Brazil. Sec.: Leao Machado, Caixa Postal 330, Sao Paulo.

Oct. 11-15 — **International Congress on Diseases of the Chest (Eighth),** Mexico City. Exec. Dir. Murray Kornfeld, 112 E. Chestnut St., Chicago.



PERFORATED DIVERTICULITIS

According to an article by J. M. Large on the treatment of perforated diverticulitis,* evidence is accumulating which indicates that better results can be obtained by a radical surgical approach to this serious condition.

This British surgeon points out that many technics have been suggested for the treatment of perforating diverticulitis. The most common method has been drainage, with or without suture of the perforation, and with or without colostomy. The results have often been poor, and mortality rates in excess of 40 per cent have been reported. The poor results have been ascribed to the fact that the perforated gut is left within the peritoneal cavity. Survivors of the initial catastrophe usually require prolonged hospitalization and several operations. If the perforation is due to carcinoma, rather than to diverticulitis, there is usually a delay of weeks or months before resection can be attempted. The basic cause of the high mortality, however, is that the source of infection remains in the peritoneal cavity, and even a proximal colostomy does not stop the leakage.

Convinced that better results could be obtained by a more radical approach, Large removed the source of infection from the peritoneal cavity by an emergency resection and anastomosis, or by exteriorization of the colon and subsequent resection. The author reported on a series of 18 patients, all of whom had peritonitis due either to a free perforation or to rupture of a pericolic abscess into the peritoneal cavity. In four patients solid fecal matter was present in the peritoneal cavity. At the time of operation all the lesions were thought to be diverticulitis, but five proved to be carcinoma. All patients were treated by immediate resection and anastomosis.

According to the report, mobilization of the colon was achieved without undue difficulty, but in patients with an abscess in the mesentery, resection was tedious. In most patients significant disease was limited to the pelvic colon, so that anatomosis could be made without extensive mobilization of the descending colon and without undue tension. An open anastomosis was made with a single layer of interrupted sutures of monofilament stainless steel. In addition to the operative procedure, all patients had gastric suction, intravenous fluids and a broad-spectrum antibiotic. Those who were in shock were given vasopressor drugs.

The outcomes of the more radical approach to the treatment of perforated diverticulitis in this series consisted of 16 recoveries and two deaths. One death occurred in a man 85 years of age with generalized peritonitis, who died from bronchopneumonia two days after the operation. The second death occurred in a 62-year-old man who died on the sixteenth postoperative day from cardiac arrest, during the induction of anesthesia to drain a small subphrenic abscess.

According to the author, the dangers of resection and anastomosis of unprepared colon and of extensive mobilization in the presence of peritonitis are so contrary to staunchly advocated principles of colonic surgery that many surgeons have deferred attempting it. Emergency resection ought to be unsafe, but nevertheless, experience is beginning to show that in practice the benfits outweigh the theoretical dangers.

Perforated diverticulitis is a disease in which the majority of patients are elderly and obese, and often have other organic disease. Despite the seriousness of the condition and the associated problems, the author states that if the patient can be made fit for surgery at all, the chance of his survival seems to be greater following radical than following conservative surgery.

* Large, J. M.: Treatment of perforated diverticulitis. LANCET, 1:413-414, (Feb. 22) 1964.

SCOPOLAMINE POISONING

The poisoning of six patients in a six months period as a result of the ingestion of a widely advertised sleep-inducing preparation that is available to the public without prescription has been recently reported.* The product, called "Sominex," contains 0.25 mg. of scopolamine, among other ingredients, and it is advertised as being "harmless" and "safe" if taken "according to directions." All six patients poisoned had ingested the tablets with suicidal intent. The number of tablets taken varied from 12 to 20, and one patient was said to have taken "a handful."

The symptoms and signs of scopolamine poisoning were very similar in all six patients. All were critically ill, and the manifestations consisted of coma, convulsions, hallucinations, mydriasis, rapid pulse, dry and flushed skin, ataxia, a positive Babinski sign, and fever.

The authors point out that physicians must consider the possibility of scopolamine poisoning in the differential diagnosis of coma, convulsions or disorientation, and that the unrestricted sale of such a potent drug makes it readily available to disturbed adolescents, alcoholics and depressed patients. If the drug is taken "according to direc-

* Beach, G. O., Fitzgerald, R. P., Holmes, R., Phibbs, B., and Stuckenhoff, H.: Hazards to health: scopolamine poisoning. NEW ENGLAND J. MED., 270:1354-1355, (June 18) 1964.

tions" it is probably safe, but patients bent on self-destruction will be undeterred by the directions. They will completely disregard them. The authors also caution that a dose of scopolamine large enough to dilate the pupils can precipitate acute glaucoma, particularly in the elderly patient.

This warning that a widely advertised sleeping tablet contains the potent drug scopolamine is wise, and it is timely. The table of ingredients on the label has little meaning for the layman who purchases the product. Thus physicians should warn their patients of the hazard of poisoning if the tablets are ingested by children, or if the instructions are disregarded by users of whatever age!

ACCURACY IN ELECTROCARDIOGRAM INTERPRETATION

A study of differences among electrocardiogram interpretations recently published by a group from George Washington University* points out the need for improved methods of measurement and more clearly defined diagnostic criteria.

In the investigation by Caceres and colleagues, 561 consecutive electrocardiograms of adult patients taken on the same instrument were routinely processed through the hospital heart station. Observer variations were examined by comparing the extent and nature of disagreement in diagnostic findings and time measurements in two independent sets of reports. The first reports were made by one of three electrocardiographers who were supervising the reports made by members of the house staff on reading assignment. Interpretations were made according to individual backgrounds of training and experience. The same electrocardiograms were later analyzed independently by a second set of readers, two of the authors jointly, who used the spacial vector approach.

The electrocardiograph diagnostic findings were analyzed by the two groups of observers according to the following classifications:

1. Normal.
2. QRS abnormalities:
   A. Ventricular hypertrophy and low voltage.
   B. Ventricular conduction defects including significant left-axis deviation.
   C. Myocardial infarction.
3. ST-T abnormalities including digitalis effect.
4. Arrhythmias and A-V conduction defects.
5. P abnormalities.

Both sets of observers also measured the longest PR and QT intervals, and the QRS duration to the nearest 0.01 second, besides making an interpretation.

Agreement on interpretation was said to be present when reports of the diagnostic findings according to the above classifications were the same; disagreement was said to have occurred when one or more diagnoses were reported by only one of the two groups. There was agreement in 335 (59.7 per cent) of the 561 electrocardiograms, and disagreement in 226 (40.3 per cent). Among the 335 tracings in which there was agreement, 17.6 per cent were considered normal by both groups of readers. Of the 226 tracings in which there was disagreement, 8.9 per cent had been considered normal by one of the two sets of readers.

Among the 226 electrocardiograms in which there was disagreement, there were 307 instances of an abnormality that was diagnosed by one reading group but not by the other. Diagnostic disagreement occurred concerning 109 QRS complexes; 134 ST-T abnormalities; 30 P wave abnormalities; and 34 arrhythmias. The disagreements concerning QRS abnormalities which were of importance in relation to clinical practice consisted of 39 with myocardial infarction and 41 with ventricular hypertrophies.

In the measurement of the PR interval, the duration of the QRS complex and the QT interval, there were considerable reader differences. There was agreement between the two groups on approximately one-third of all three of these measurements. The greatest differences occurred in the measurement of the QT interval, and fewest regarding QRS duration.

The authors point out that the extent of variation among observers who regularly report on electrocardiograms must be appreciated if diagnostic errors and their clinical consequences are to be correctly evaluated. Although the variations in interpretation between two given groups may be expected to bear an inverse relationship to the training possessed by the readers, the variations encountered in the present study, in which the reports of adequately trained readers were compared, is probably representative of current electrocardiographic practice.

According to the Washington group, variations in methods of measuring and in diagnostic criteria are responsible for the divergence of opinion on interpretation. Disputes over the electrocardiographic diagnosis of myocardial infarction, for example, may be due to different estimates of the duration of the Q wave or to different criteria for diagnosis, or both.

This and other similar studies indicate the need for improved methods of measurement and a better definition of diagnostic criteria.

The time is not far distant when modern electronic equipment will be applied to electrocardiography, and human error will be largely eliminated. It is well for the clinician to remember, however, that the electrocardiogram is no substitute for a careful history, a complete physical examination, indicated laboratory studies, and diagnostic acumen.

* Gorman, P. A., Calatayud, J. B., Sidney, A., and Caceres, C. A.: Observer variation in interpretation of electrocardiogram. MED. ANN. DIST. OF COLUMBIA, 33:87-99, (Mar.) 1964.

Editorials continued...

MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION

Recent technics in the management of acute myocardial infarction have suggested that deaths among patients with that condition can be reduced, and that certain patients with so-called "fatal" heart attacks can be restored. Because of these facts Mower, Miller and Nachlas, of Sinai Hospital, Baltimore,* ask that attention now be focused upon the clinical manifestations which might indicate impending death, upon the kind of death that might be expected, and upon the type of patient who is restorable. In an attempt to gather this information, the authors analyzed their clinical experience in an endeavor to identify those patients who were most likely to succumb and the time interval during which the untoward effects might occur.

From January 1, 1959, to December 31, 1961, a total of 1,101 patients with a diagnosis of acute myocardial infarction were treated at Sinai Hospital. One hundred ninety-one of those patients died. After a review of the case records of these 191 deaths, 100 were excluded from the study for various reason: that the occlusion had occurred followed surgery or in association with some major illness; that the diagnosis had not been fully established clinically or confirmed at autopsy; or that the recorded information was incomplete. Also excluded were five patients with rupture of the myocardium, for there had been no possibility of resuscitation in those instances. An additional 81 patients had been admitted to the emergency room with a presumptive diagnosis of acute myocardial infarction and had died within a very short period of time. Although the diagnoses in most of these cases had probably been correct, in only 47 instances had sufficient information been gathered to fulfill the necessary criteria for including the cases in the study. Thus, 138 cases were analyzed —those of patients who had died as a result of acute myocardial infarction uncomplicated by concurrent illness.

The authors point out that patients who die from acute myocardial infarction present one of three more or less distinct patterns of clinical behavior. One group of patients die suddenly, and the terminal event is characterized by an arrhythmia which lasts for minutes or for as much as an hour. If time permits, an electrocardiogram usually records the presence of premature ventricular contractions, ventricular tachycardia, or ventricular fibrillation. A second group are characterized by an inability to sustain blood pressure, their response to vasopressors is usually short-lived, and death occurs within hours to several days. Although abnormal rhythm may be present during this critical time, the precipitating and prominent features are hypotension and clinical shock. The third group is one in which the signs and symptoms of congestive heart failure appear at some time during the illness, and death occurs after a period of deterioration lasting up to several days. Such patients may show an associated hypotension or disturbance of rhythm, but the history and examination will ordinarily suggest the primary disturbance.

In the series of 138 deaths, so-called rhythm deaths had occurred in 56 per cent of the cases; 27 per cent had died in congestive failure; and 17 per cent had died in shock. A summation of seven studies—six from the literature plus the Sinai series, totalling 692 cases—revealed that about one-half of the patients who die during the course of acute myocardial infarction succumb to arrhythmia; one-third die of congestive failure; and one-sixth as a result of circulatory collapse.

The sex of the patient seemed to have had no bearing on the manner in which death occurred. Age likewise had no significant influence upon the type of death; however the incidence of heart failure increased from 16 per cent among patients in the younger age group to 32 per cent in those over 60 years of age, and to 40 per cent in patients over 70 years. This greater incidence in the older age group was attributed to more myocardial fibrosis, and with additional destruction of cardiac muscle, failure resulted. In the group of 138 fatal cases analyzed, 45 of 113 patients had given a history of angina pectoris; 26 of 113 had previously been in congestive failure; and 51 of 116 had had one or more prior myocardial infarctions. When the data relating to the presence or absence of preceding symptoms were analyzed, no significant effect upon the mode of death could be shown. Even when heart failure or myocardial infarction had occurred previously, the likelihood that the patient would die in heart failure was not increased.

The duration of illness, in the group of 138 fatal cases, had been shortest in those patients in whom the prominent feature of the disease was arrhythmia (average 5.0 days) and hypotension (average 5.3 days). Those who died as a result of congestive failure had been ill for an average period of 10.4 days. The periods of hospitalization had averaged 3.7, 3.5 and 7.2 days, respectively.

For each of the groups of patients, the early period had been the most critical time, although the patients who had died in failure had succumbed more than 10 days after the onset of their symptoms, and 27 per cent of this group had been hospitalized more than 10 days. Of great significance was the fact that in the entire group of 138 fatal cases in the Sinai Hospital series, 74 per cent of the deaths had occurred within a five-day period of hospitalization.

For a few of the patients admitted in severe shock and congestive failure, a fatal outcome had

* Mower, M. M., Miller, D. I., and Nachlas, M. M.: Clinical features relevant to possible resuscitation in death after acute myocardial infarction. AM. HEART J., 67:437-444, (April) 1964.

been anticipated at the time of the initial examination. However, in the majority of instances such predictions had not been possible. Forty patients had had hypotension on admission, and the distribution of their deaths among the rhythm, congestive failure and shock classifications was similar to that for the total group. Though 57 per cent of the hypotensive group had died because of arrhythmia, in 31 of the 40 patients shock had continued to be prominent during the illness. Fifty-nine patients had manifested some degree of congestive failure on admission, and in this group there were 34 per cent rhythm deaths, 51 per cent died in failure, and 15 per cent from shock. Only 13 of these patients had had hypotension on admission, and two-thirds of them had died rhythm deaths and the remaining one-third died in congestive failure.

One or more electrocardiograms were taken on nearly all of the patients. Among the 138 patients there was evidence of myocardial irritability in 63, and no conduction abnormalities in 86. Despite the absence of these electrocardiographic abnormalities, over one-half of these patients had died from arrhythmia. In those patients in whom an intraventricular block had been demonstrated, 46 per cent had died of congestive failure. The most significant electrocardiographic association was that in 79 per cent of patients in whom ventricular irritability had been found, death resulted from arrhythmia.

The serum transaminase level had been determined in 86 patients. Those who had died as a result of congestive failure had had the largest proportion of high transaminase levels. It was felt that most patients who succumbed to arrhythmia and shock had not lived long enough to develop high transaminase levels. According to the authors, an elevated level early in the course of a patient's illness should alert the physician to the possibility of impending death.

As a result of their experience at Sinai Hospital, in which 74 per cent of the fatalities after acute myocardial infarction had occurred within the first five days, it was recommended that all patients admitted with this condition be placed in an *acute coronary-care unit.* This special unit, staffed to provide continuous monitoring for a minimum of five days, ought under ideal conditions to permit the immediate recognition of cardiac arrest in three of every four patients.

The 26 per cent of patients who have been dying after greater intervals present a special problem. The ideal approach, however impractical, would be to keep them continuously monitored for the entire time they are in the hospital. A more reasonable solution would be to keep them in the acute coronary-care unit for an initial five-day period, and to return them to that ward whenever adverse signs or symptoms appear. According to the authors, a reactivation or an increase in chest pain, a fall in blood pressure, or the reappearance of electrocardiographic signs of ventricular irritability are generally recognized signs, but they have not been sufficiently heeded.

The possibility of reversing the course of a fatal heart attack in some patients is now recognized. The frequency with which survival might be achieved is unknown, but it is known to be related to the reversibility of ventricular fibrillation and the efficacy of the resuscitative measures employed. Success is most likely in those patients in whom the interval between the onset of cardiac arrest and the institution of restorative measures is the shortest. The prompt recognition of the clinical features which suggest a fatal outcome have been emphasized by the authors. Through identifying these high-risk patients promptly and observing them closely in a coronary unit, it is reasonable to believe that the mortality from acute myocardial infarction can be reduced.

LEST FAMILIARITY BREED CONTEMPT

It is well for physicians to be reminded at intervals of the God-given miracle of the living human organism. It is easy to lose sight of the wonder of the functioning brain, the heart, the kidneys and the delicate homeostatic mechanisms of the body when one is engrossed in a busy practice of medicine.

To renew his appreciation of the miracle of the human body, the doctor might well meditate upon the following paragraph from an article by George C. Griffith on the subject "The Aging Heart."* It might even impress an uncooperative cardiac patient.

"The heart functions as a double pump, and the work performed is staggering. For the normal individual at rest, the average heart rate is 70 beats per minute or 36 million beats per year, or 2 billion beats in a 50-year period. At rest, the average heart pumps 2 ounces of blood with each beat, nearly 5 quarts per minute, or 75 gallons per hour. When the body is moderately active, the heart doubles this output. With a strenuous effort such as running to catch a train, the cardiac output may go up to 14 barrels per hour. Over the 24 hours of an average day involving not too vigorous work, the cardiac output averages some 70 barrels. In a lifetime of 70 years, the heart pumps nearly 18 million barrels of blood. Another way of stating the phenomenal performance of the heart is that at its normal beat, the heart performs about 70 foot-pounds of work per minute, more than 100,000 foot-pounds per day. This is about twice the rate of energy output by the leg and arm muscles of a man running at top speed. The peripheral muscles soon become exhausted by such strenuous activity, but the heart keeps on working at its high rate decade after decade throughout a man's lifetime."

* Griffith, G. C.: Aging heart. AM. J. CARDIOLOGY, 13:424-430, (March) 1964.

Letters to the Editor

(Following are portions of the correspondence occasioned by the editorial "The Fund Raisers and the Citizen" which appeared in the July, 1964, JOURNAL. *The letter from Mr. Arthur Stocks was his second, written in response to one from Dr. Kelly containing statements similar to those which he subsequently made to Dr. Weinberg.)*

Dear Sir:

I write in answer to your editorial entitled "The Fund-Raisers and the Citizen" in the JOURNAL OF THE IMS for July 1964. An editorial which is biased toward one side of a controversial issue should really be signed by the writer in order that the readers know who is expressing the opinion, and particularly to make it clear that it is the opinion of a single individual rather than of the IMS. I should like to point out that many IMS members are active in the programs of the various voluntary health agencies and doubtless the majority of all doctors are strong supporters of these agencies.

Responsible doctors and lay leaders everywhere are concerned over the multiplicity of agencies and of fund drives but recognize that the seemingly pat solution of bovinely joining the United Campaigns is no solution at all. The American Heart Association, for example, is strongly cognizant of this problem and in June 1959 its board of directors indicated its wish to search for solutions. Further action was postponed when the Rockefeller Institute set up a study apparently intended to cover the same ground. The latter was published in 1961 as the so-called Hamlin Report, and while it covered a great deal of ground it did not answer the following two critical questions: (1) What are the major areas of chronic disease which present the greatest threat to our national health and welfare, and (2) What criteria will guide the public in making voluntary contributions of time, effort and funds to individual health causes? The Heart Association still feels that answers to these two problems are essential and hopes to continue to pursue them.

I would not presume upon the JOURNAL'S space nor the reader's time to explain here why some of the major national voluntary health agencies prefer independent fund raising, but I can assure you that they have cogent and valid reasons for their opinions. (If such an exposition is requested, I will be happy to present it in detail.) Suffice it to say that the American Heart Association is constantly re-appraising its position and will continue to do so. The next re-appraisal will take place in Atlantic City, October 26-27, 1964, at the Annual Meeting. At that time delegates from every state, including Iowa, will discuss the question: "Does our experience since October 26, 1955, when our basic policy with respect to participation in federated campaigns was adopted, indicate any need for change in that policy at the present time?"

You can be sure that all sides of the problem will be fully aired during these discussions. I hereby extend a cordial invitation to the editorial writer to attend these meetings and obtain a balanced view of this important problem.

H. B. WEINBERG, M.D., *Chairman*
Fund Raising Advisory and
Policy Committee
American Heart Association

Davenport, Iowa
August 4, 1964

Dear Dr. Weinberg:

Inasmuch as I am the guilty party who wrote the editorial with which you take issue, I will reply to your letter of August 4, 1964.

In the first place, it is pleasing to note that someone does actually read the editorials in a state medical journal. Secondly, it is not displeasing to have an editorial provoke discussion or even controversy.

The editorial in question was not written in haste. The idea originated in January when I made out my federal income tax return. The deduction for contributions listed donations to 27 different religious, health and social agencies. Somehow this did not seem like intelligent giving and that more good would result from giving larger amounts to fewer worthwhile organizations.

Before writing a word on this subject I talked with the directors of various health agencies in this community and they expressed serious concern about the multiplicity of independent drives for funds and the duplication of services. I have discussed the problems with my colleagues and those with whom I have talked agree that they are surfeited by appeals for contributions to special health funds. Laymen to whom I have addressed inquiries also complain about the number of individual drives and I have heard intelligent and generous citizens assert that they are through giving to special fund raising efforts.

I am confident that the directors of the American Heart Association, the American Cancer Society, the Polio Foundation are fully cognizant of this problem. I am fully aware of the fact that by conducting individual campaigns for funds they get more publicity and they raise more money and unquestionably individual efforts have a distinct educational advantage. However, the point of the editorial was that the mere number of appeals places them all in jeopardy. In this I believe I am correct. It is quite possible to kill the goose that lays the golden egg.

This editorial reflected the opinions of the editor, and I assure you there was no intent to embarrass or discredit the American Heart Association.

DENNIS H. KELLY, SR., M.D.
Scientific Editor

Des Moines, Iowa
August 7, 1964

Dear Dr. Kelly:

Thank you so much for your prompt and frank reply to my letter of July 27 addressed to Ed Hamilton.

Yes, indeed, our organization, too, is concerned about the multiplicity of drives, and especially so of the multiplicity of drives in our particular disease field.

And, the American Cancer Society has done and is doing something to correct this situation insofar as possible. For example: In recent years the American Cancer Society has eliminated, for the most part, two previous independent fund-raising efforts in the field of cancer control by successfully negotiating mergers with the Eleanor Roosevelt Cancer Foundation, Inc., and with the Babe Didrikson Zaharias organization.

At the present time, the American Cancer Society is attempting to negotiate a merger with the Leukemia Society, Inc.; in fact, the "door is always open" to any other legitimate cancer fighting charity group which might be interested in discussing merger possibilities with the American Cancer Society.

Our problem in Iowa, of course, is quite minor compared to some of the more metropolitan areas. For example: In Chicago there are perhaps as many as 37 separate agencies soliciting funds for some type of "cancer" activity. These range all the way from large nationwide organizations such as the American Cancer Society and the Damon Runyon Fund to small neighborhood-type organizations created by, perhaps, the parent of a child who has died of leukemia.

I often feel a bit of concern, mingled with a bit of sympathy, for those charity organizations in the "crippling disease" field, such as the Arthritis and Rheumatism Foundation, National Association for Crippled Children and Adults, Multiple Sclerosis, Muscular Dystrophy, and, of course, the National Foundation. Though we would agree these are all worthy and legitimate agencies, at the same time, there is perhaps a bit of unavoidable duplication in their approaches to a solution of the problem.

The big problem faced by United Fund-type "one-drive-for-all" organizations is that the American public simply is not "educated" to give in the same proportion to one single drive for several agencies that it gives to the same number of agencies through independent efforts. In fact, it is sad but true that many givers consider a "one-drive-for-all" effort an opportunity to decrease rather than increase the total amount of their giving; thus a Community Chest drive for ten agencies might receive $7.00 from a giver while if those same agencies conducted independent campaigns, they might receive a dollar each.

Another factor in charity giving is that the giver usually likes to associate himself with support of a specific disease-fighting organization. This is possible when he makes a specific gift to a single organization, but he does not receive this same emotional satisfaction in making an equally worthy contribution to a "fund-raising mechanism" such as a United Fund or Community Chest.

In Mason City we have a Community Chest which solicits funds on behalf of seven local agencies, including the Y.M.C.A., the Y.W.C.A., Salvation Army, Family Service, etc.

Obviously, many of these groups, especially the Family Service organization, have no "inherent fund-raising ability."

If our Community Chest did not support the Family Service organization, that valuable community institution would have to close its doors. I believe this is one of the biggest reasons for encouraging public support of our Community Chest effort.

Basically, I think that each worthy charity agency must decide for itself those fund-raising techniques which will be most effective in meeting its needs. For some the answer may truly be membership in a Community Chest or United Fund effort.

At this particular stage of our American Cancer Society operation, a 14-year study of fund-raising techniques has indicated rather overwhelmingly that our independent approach is most effective for us.

In closing, I would like to assure you that both the Iowa Division's State Board of Directors members and the American Cancer Society's national Board of Directors members are constantly evaluating various legitimate fund-raising techniques so that we may implement those procedures which will most effectively raise the funds we need and which, at the same time, will meet with approval of the majority of contributors.

ARTHUR F. STOCKS
Executive Vice President
American Cancer Society,
Iowa Division, Inc.

Mason City, Iowa
July 30, 1964

Conference on Medical Aspects Of Sports

The Sixth National Conference on the Medical Aspects of Sports will be held at the Deauville Hotel, Miami Beach, Florida, on November 29, in conjunction with the interim meeting of the AMA.

Among the subjects to be covered are (1) The Shoulder in Sports, (2) Environmental Considerations, (3) Sports for the Teenager, and (4) Conditioning and the Competitive Swimmer. The dates for the AMA Clinical Convention are November 29-December 2.

President's Page



The usual and customary fee concept pertains to a service, a circumstance, the individual physician and his own standard of excellence. It is a principle.

A fee schedule is concerned with procedure only. It is a device, not a principle. When rigidly imposed, it has the capacity to disregard circumstances, equate physicians, set its own standards of excellence and make a mockery of service.

An adequate or generous private insurance schedule lures the physician to complacent acceptance of this method as a convenient and requiting substitute for the original concept.

Too late comes the discovery that government has its own devices and will not in its negotiations countenance a retreat to the more cumbersome and exacting principle of usual and customary.

Otis D Wolfe

President

IMS Fall Conference for County Medical Society Officers And Other Representatives

Sunday, September 13, 1964
Savery Hotel, Des Moines, Iowa

Terrace Room

9:00 a.m. REGISTRATION

9:30 a.m. MESSAGE FROM THE PRESIDENT

Otis D. Wolfe, M.D., Marshalltown, Iowa
President, Iowa Medical Society

10:00 a.m. OUTLOOK FOR 1965

Donovan F. Ward, M.D., Dubuque, Iowa
President-Elect, American Medical Association

10:15 a.m. MEDICINE AND THE LAW

Robert B. Throckmorton, Chicago, Illinois
General Counsel, American Medical Association

10:30 a.m. AN ACCOUNTING—YOUR DUES DOLLARS

S. P. Leinbach, M.D., Belmond, Iowa
Chairman, Board of Trustees, Iowa Medical Society

10:45 a.m. MAN'S GREAT NEED—HEALING

Walter H. Judd, M.D., Washington, D. C.
Former U. S. Representative

11:30 a.m. THE PREVENTION OF SOCIALIZED MEDICINE BY LOCAL COUNTY SOCIETY ACTION IN THE FIELD OF MENTAL HEALTH

Thomas C. Piekenbrock, M.D., Dubuque, Iowa
Chairman, IMS Subcommittee on Nervous and Mental Diseases

11:45 a.m. QUESTIONS AND ANSWERS

Des Moines Room

12:00 noon LUNCHEON; Dr. Carl Byers, Cleveland, Ohio, Member, Speaker Staff, General Motors Corporation, "Get Off Your Launching Pad"

Terrace Room

2:00 p.m. INDIVIDUAL RESPONSIBILITY PLAN

Joseph Boyle, M.D., Los Angeles, California

2:30 p.m. YOU'RE IN POLITICS, DOCTOR!

F. C. Coleman, M.D., Des Moines, Iowa
Member, Board of Directors, AMPAC
R. C. Brown, M.D., Mason City, Iowa
Chairman, IPPL

2:45 p.m. IN THE WORKS . . .

Iowa Medical Foundation—George H. Scanlon, M.D., Iowa City, Iowa, President, Iowa Medical Foundation

The Medical-Legal Committee—Ralph P. Lagoni, M.D., Eldridge, Iowa, Chairman, Medical-Legal Committee, Scott County Medical Society

Physician-Clergy Relations—R. Paul Ferguson, M.D., Lake City, Iowa, Member, IMS Committee on Medicine and Religion

A Legislative Year—John H. Kelley, M.D., Des Moines, Iowa, Chairman, IMS Committee on Legislation

Speakers Bureau—John G. Thomsen, M.D., Des Moines, Iowa, Chairman, IMS Committee on Public Relations

3:30 p.m. IOWA'S PUBLIC HEALTH NEEDS

A. P. Long, M.D., Des Moines, Iowa
Commissioner of Health, State of Iowa

3:45 p.m. MAA IN IOWA—PAST AND FUTURE

Elmer M. Smith, M.D., Des Moines
Medical Director, State Department of Social Welfare

THE JOURNAL *Book Shelf*



BOOK REVIEWS

SURGERY, by *Richard Warren,* M.D., in collaboration with some members of the Department of Surgery of the Harvard Medical School. Illustrations by *Janis Cirulis* (Philadelphia, W. B. Saunders Company, 1963. $19.50).

This volume is offered by the author and the publisher as "A book on surgery for students of medicine and surgery," and its avowed purpose is "to fill the vacuum" created by the passing of Dr. John Homans and his TEXTBOOK OF SURGERY. The list of collaborators comprises a large portion of the Harvard Surgical Faculty.

The book is divided into two sections, the first 10 chapters dealing with general surgical principles, e.g., fluid therapy, wound healing and management, and effects of trauma, and the subsequent 24 chapters dealing with what might be termed regional surgery.

A short historical review initiates the discussion in most chapters. The illustrations are line drawings, and there are a few charts and graphs.

A work covering such an extensive subject must necessarily be superficial in many respects. This shortcoming is compensated for, to some extent, by a generous bibliography following each chapter, to which the student may turn for more detailed material.

The emphasis is on basic diagnostic and therapeutic principles, and surgical technic is definitely deemphasized. As a result, surgical anatomy is not brought into focus.

As a basic text for students, the book has much to offer. Practicing surgeons desiring an all-encompassing source book will probably find it disappointing.—*C. L. Beye, M.D.*

SURGERY IN WORLD WAR II: ACTIVITIES OF SURGICAL CONSULTANTS, VOLUME II, ed. by *Col. John Boyd Coates, Jr.* M.C., USA, and *B. Noland Carter,* M.D., and *Elizabeth M. McFetridge,* M.A. (Washington, D. C., Office of the Surgeon General, Department of the Army, 1964. $8.50).

Part I of this volume covers the European Theater and takes up 621 pages of the total. Part II covers the Pacific Theater with all its components. The book contains many pictures of officers and men, casualties, hospitals and actual fighting scenes. Any medical officer who participated in World War II would recognize many of the faces and places. Since the reviewer was located in Ireland and England during the War, that section received his greatest attention.

Dr. Elliott C. Cutler, professor of surgery at the Harvard Medical School and also commanding officer of Base Hospital No. 5, was selected in February, 1942, to be chief consultant in surgery, ETOUSA. He was promoted to colonel in July, 1942, and on August 8, 1942, arrived in London. Pictures of Hq ETOUSA in Grosvenor Square and the Office of the Chief Surgeon, General Hawley, at 9 North Audley Street, arouse many nostalgic feelings in anyone who was there.

Many of the problems arising in the formation of a competent consultant staff are discussed. The problems with the Army Air Force Medical Department, which always considered its type of medical problems a bit unique, were gradually worked out. Supply channels for American supplies, liaison with the British and integration of the British types of supplies were gradually smoothed. Establishment of all types of hospitals and rest and convalescent homes, and evacuation by train, ambulance and plane are some of the multiple problems discussed. Continuation of the Flight Surgeons' School at "Pinetree," High Wycombe, was covered.

Colonel Cutler visited a Canadian hospital where he saw "Colonel H," who had gone on the Dieppe raid with the British and Canadians, and had lost a foot from a direct hit on the bridge of the destroyer on which he was a passenger. "Colonel H" was a fighter pilot whom the reviewer had known at Daniel Field, Augusta, Georgia, before going overseas. He had seen and talked with him later at the Senior Officers' Club in London, but this was the first good account he had seen of his injury.

The studies of the use of sulfonamides was an interesting chapter. The arrival of the first penicillin—in a crate enclosing 180 boxes each with 10 ampules containing 10,000 Florey units—made May 5, 1963, a notable day.

Probably the build-up for the invasion of Europe supplied the most interesting reading. This was followed by the invasion itself, and the fighting across France and into Germany. There is too much there for adequate coverage in a review.

For the medical officer of World War II and for the student of history, I strongly recommend this volume. It is a fine addition to any medical library.—*C. Harlan Johnston,* M.D.

THE FAT BOY GOES POLY-UNSATURATED, by *Elmer Wheeler* (Garden City, N. Y., Doubleday & Co., Inc., 1963. $3.50).

This book was written by a layman whose medical insight is much better than that of most such people who purport to be medical authorities. It describes the cholesterol problem in the way that his 1953 book, THE FAT BOY'S BOOK, spoofed about too many calories. This volume is funny from start to finish, and contains true information.

The character, Cholesterol Charlie, is in his forties,

overweight, and hypertensive. Through his adventures with his diet, he loses 40 pounds and reduces his blood pressure to 120/80 mm. Hg. Cholesterol Charlie's doctor quotes from Ancel Keys and L. W. Kinsell, and from reports on the World War II Norwegian diet, and the fish and rice eating Japanese. C. Charlie converts to sherbets, Venus Wheat Wafers and life savers, and adopts other low-cholesterol measures. He is sure that pigs grunt because of the heavy cholesterol load they carry. He philosophises on how one can slow the clock.

This book is a good means of explaining the cholesterol problem to laymen. It makes a good present to give to a fat friend. It can be read in an evening.—*T. D. Ghrist, M.D.*

YOUR WEIGHT AND HOW TO CONTROL IT, REVISED EDITION, ed. by *Morris Fishbein*, M.D. (Garden City, N. Y., Doubleday & Company, Inc., 1963. $3.95).

Thirteen medical authorities have collaborated to describe weight problems and weight control. The book offers good background information for laymen, interested in losing weight, and for dietitians and calorie-advising physicians. It is predicated on the assumption that a well-informed patient is more likely to succeed in losing weight. It dispels fallacies and superstitions concerning dieting. It answers questions about heredity and endocrine glands in relation to weight problems, and also exercise, unsupervised fat-reduction programs, obesity in children, psychosomatic difficulties, and experimental work in animals. There are some interesting historical facts about famous people who resorted to quacks, nostrums or fad programs, and who misused respectable drugs.

Whether the physician-reader agrees or disagrees with the ideas in this book, it will provide him with answers to many questions that conscientious dieters ask.—*Thomas D. Ghrist*, M.D.

BLOOD DISEASES, by *M. A. Atamer*, M.D. (New York City, Grune & Stratton, Inc., 1963. $16.50).

This is a comprehensive, concise treatise on blood diseases which describes the incidence of signs, symptoms and laboratory findings in hematologic disorders. It also describes the results of treatment and the prognosis in these various conditions. Eighteen thousand cases reported in the literature in recent years have been tabulated by the author, each table summarizing the published work of five or six authors. A number designates each author in the table and in the reference list at the end of each chapter, thus enabling the reader to seek out the original article, if need be.

In addition to the tables for nearly 75 diseases, there are monographs describing the diseases. These cover etiology, pathophysiology, manifestations, treatment and prognosis. Particularly valuable is the emphasis on simple observations which have hitherto received little attention.

This book is very suitable for internists, pediatricians, pathologists, general practitioners and medical students. It clarifies clinical problems and rare situations that hematologic patients may manifest. The tables on the various diseases make the text ideal for physicians who are amassing information with which to establish electric-computer "memories." The table carefully eliminates or limits discussion of those entities which are controversial or atypical, or represent only variant terminology.—*Thomas D. Ghrist*, M.D.

MODERN TREATMENT: TREATMENT OF RENAL DISEASE, VOLUME I, No. 1. (New York City, Harper & Rowe, Publishers, 1964. $16 for a series of six).

MODERN TREATMENT is a new bimonthly publication in which one or two symposia on treatment in particular areas are presented in each issue. Good authors summarize the principles of high-quality care that are followed at leading medical centers. The physician who subscribes to this series will refer to current or back issues for concise aid in his treatment of a disease. It is intended to serve the same purpose as MEDICAL CLINICS OF NORTH AMERICA, DISEASE A MONTH, a rapid survey of the medical journals, or a standard textbook arranged for ready reference.

The first issue describes treatment of renal diseases, and treatment of thyroid diseases. Little is left untouched that a non-surgical physician can treat. Eight chapters, individually authored, are devoted to renal diseases, six chapters are devoted to thyroid disease, and within them the whole range of diseases is encompassed. In the renal-disease section, there is a noticeable omission regarding the treatment of renal acidosis, renal hypertension and obstructive uropathy, and the medical approach to the treatment of patients who have kidney stones. MODERN TREATMENT will interest internists, pediatricians and general practitioners. One surgeon has contributed a chapter on Hashimoto's disease, thyrotoxicosis and malignancy, and it is the chapter which will be particularly interesting to surgeons.

The references that appear at the ends of the chapters are not so current as those on similar subjects presented in MEDICAL CLINICS OF NORTH AMERICA. The physician using MEDICAL TREATMENT will find that it helps him little more than some standard renal-disease textbooks that have been published since 1961. Since it contains a predominance of treatment measures, it is of little assistance to the physician who must rapidly unravel a diagnostic predicament, but on the other hand, since the authors tend to stray from treatment into diagnosis and other areas of practice, thus duplicating MEDICAL CLINICS OF NORTH AMERICA, it may compound the physician's reading load. The conciseness of MEDICAL TREATMENT does not appear to outweigh these disadvantages.—*Thomas D. Ghrist*, M.D.

PRINCIPLES OF PUBLIC HEALTH ADMINISTRATION, FOURTH EDITION, by *John J. Hanlon*, M.D. (St. Louis, C. V. Mosby Company, 1964. $11.50).

Since its first publication in 1950, this book has been accepted as one of the leading texts and reference works in its field. As the author suggests in his preface to this Fourth Edition, we are living in a period of great and rapid change in our society. Many events, from the achievement of nuclear fission to the increasing development of automation, eventually have their effects on health, and on the administrative patterns through which health services are provided. No better illustration of this can be suggested than a review of the sweeping changes which have been made in this text in the past 14 years.

For anyone who consults this book frequently, the

most appreciated if not the most important change in this Fourth Edition may be the new, more easily readable type. Also of great value is the revision of illustrative statistical tables to include data from the 1960 Census. Major revisions have been made in the sections on Radiological Health, Maternal and Infant Mortality, and Performance Budgeting. Minor revisions have been made throughout the text.

While essentially a book for the practicing health officer and medical administrator, some sections of the book would be of interest to the general physician. The opening chapters are particularly well-written, from a literary point of view, and could be read for enjoyment as well as for information.—*James Speers,* M.D.

BOOKS RECEIVED

MODERN TREATMENT, Vol. I, No. 3: TREATMENT OF THE ANEMIAS AND TREATMENT OF CARDIAC ARRHYTHMIAS, by *Edwin D. Bayrd,* M.D., *J. Willis Hurst,* M.D., and *Robert C. Schlant,* M.D. (New York, Harper & Row, 1964, Bimonthly, $16.00 per year).

X-RAY TECHNOLOGY, THIRD EDITION, by *Charles A. Jacobi,* B.Sc., R.T. (A.R.R.T.), and *Don Q. Paris,* R.T. (A.R.R.T.) (St. Louis, C. V. Mosby Company, 1964, $11.50).

GIVE AND TAKE, THE DEVELOPMENT OF TISSUE TRANSPLANTATION, by *Francis D. Moore,* M.D. (Philadelphia, W. B. Saunders Company, 1964, $5.50).

THE LIVER AND PORTAL HYPERTENSION, by *Charles G. Child, 3rd,* M.D. (Philadelphia, W. B. Saunders Company, 1964, $8.50).

CHRISTOPHER'S TEXTBOOK OF SURGERY, EIGHTH EDITION, by *Loyal Davis,* M.D. (Philadelphia, W. B. Saunders Company, 1964, $18.50).

ATLAS OF GENERAL SURGERY, SECOND EDITION, by by *Joseph R. Wilder,* M.D. (St. Louis, C. V. Mosby Company, 1964, $23.50).

CARDIAC ARREST AND RESUSCITATION, SECOND EDITION, by *Hugh E. Stephenson, Jr.,* M.D. (St. Louis, C. V. Mosby Company, 1964, $15.00).

DISEASES OF METABOLISM, FIFTH EDITION, by *Garfield G. Duncan,* M.D. (Philadelphia, W. B. Saunders Company, 1964, $28.00).

The Outpatient Speech and Hearing Clinic

STATE UNIVERSITY OF IOWA
IOWA CITY, IOWA

Throughout the academic year, the Speech and Hearing Clinic of the State University of Iowa operates an Outpatient Clinic. Individuals with speech and hearing problems and parents of children with such problems are invited to avail themselves of the diagnostic and consultative services provided. Likewise state agencies and interested individuals are invited to make appropriate referrals to the Clinic.

When is the Clinic held? The Outpatient Speech and Hearing Clinic is held only on Thursdays beginning at 8:30 a.m. during the winter semesters. The dates on which it will be held during 1964-65 are:

October 1, 8, 15, 22, 29	February 11, 18, 25
November 5, 12	March 4, 11, 18, 25
December 3, 10	April 1, 22, 29
January 7, 14	May 6, 13

During the 1965 summer session, this service will be offered on Fridays as follows:

June 18, 25	July 2, 9, 16, 23

Anyone interested in attendance at the annual six-weeks Summer Speech and Hearing Clinic Residential Program should secure an appointment prior to March.

How does one apply? Write to Mrs. Bette Spriestersbach, Coordinator, Clinical Services, in the Speech and Hearing Clinic, 308 Melrose Avenue, Iowa City, Iowa. Since a large number of requests for appointments are received, it is essential that each appointment made be confirmed by mail.

Where is the Clinic held? Speech and Hearing Clinic Annex, 407 Melrose Avenue, 1 block south and 1 block east of the Field House (not University Hospitals).

What does the procedure consist of? In order to make accurate diagnosis and to make recommendations as helpful as possible, it is necessary to secure detailed information about the individual with the communication problem. As part of the clinical procedure a comprehensive case history is taken; for this it is preferred that *both* parents accompany a child to the Clinic whenever possible, and it is recommended that they bring baby books, medical records, school reports, and other helpful materials.

The procedure also includes a hearing test, a detailed speech examination, an examination of the speech mechanism, and a psychological evaluation. In those cases in which an organic basis for the problem is suspected, additional medical examinations may be recommended. Such examinations may be arranged at a later date and may make use of the service of the University Hospitals or such other facilities as the parents may request.

In most cases a formal staffing is then held for the pooling of information and a discussion of appropriate disposition. Following this a staff member of the Outpatient Speech and Hearing Clinic holds a consultation with the family or individual for the purpose of informing them of the impressions gained and making suggestions for the future.

How long does it take? The examination and consultation should be expected to occupy a full day.

What does it cost? The charge for the examination and consultation is $5.00. Payment for any medical examinations recommended by the Speech and Hearing Clinic must be arranged by the family with the medical service utilized.

THE DOCTOR'S BUSINESS



Partnership Retirement

HOWARD D. BAKER
Waterloo

Retirement plans constitute a subject of increasing interest in partnerships today, and with the advent of professional corporations, associations and self-employed retirement plans, they are topics upon which a great deal of writing is being done. Unfortunately, a great deal of this writing is superficial in nature, and fails to explore all of the ramifications of such planning.

Basically, our philosophy on partnership retirement is brief and simple. Without a separate and specific investment program to fund the retirement program, no plan is economically sound. We do not think that retirement of a partner should ever be funded out of the current and future incomes of the remaining partners. Beyond a retiring doctor's equity in physical assets and partnership accounts, any payments to him for retirement should be funded by some investment program and the benefits available to any particular partner should be based upon that doctor's specific equity or contributions to the fund.

THE SOCIAL SECURITY SYSTEM IS AN UNACCEPTABLE PATTERN

In our opinion, any attempt to support retirement out of the future earnings of remaining partners ranges from financially dangerous to impossible. Under ideal circumstances of constantly rising income, such a plan might be supportable but it would still be illogical. If the partnership income is increasing, the growth is coming from the increased efforts and heavier work-loads of the doctors who are remaining active. To pay out either a portion or all of this increase to a retired member would certainly be an injustice to the producing physicians. Like our Social Security system, under proper circumstances such a plan might be *supportable* on sheer volume of dollars, but it would be completely illogical on economic and moral grounds.

In a recent issue of MEDICAL ECONOMICS, a writer advocated precisely such a plan under the caption, "Let Your Partners Pay For Your Retirement." The article advocated just what its title implied and dwelt exclusively on the *possibility* of such an arrangement, ignoring completely any *justification* for it.

The article made many erroneous assumptions. Two were most flagrant: (1) that the number of partners would increase constantly; and (2) that the per-doctor income would continue to rise constantly. Conceding these two premises, it is possible that the plan might function. However, should the profits decline and/or the number of partners decrease, a financial impossibility could result. Another unsound premise was that a doctor leaving voluntarily for reasons other than death or retirement could be expected to forfeit his capital and accounts receivable. To summarize, such a plan's success would be dependent solely upon completely favorable financial circumstances. Adverse practice and economic conditions could render it wholly unsupportable, except to the ruinous detriment of the remaining partners.

In considering the feasibility of such proposals, one must place himself successively in the positions of both the retiring and the remaining partners and to consider all contingent adversities. If the plan can survive such a test, it may warrant further consideration.

SEPARATE PLANS STILL SEEM PREFERABLE

If we agree on the basic premise that a plan must be founded upon an investment program and upon the retiring doctors' equity in that program, the remaining question is whether such a plan should be an individual or a collective responsibility. Unless some specific financial or tax advantage presents itself, it is our opinion that partners should provide for their own retirement through

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

their individual investment plans. The major problem of a partnership plan is that of agreeing upon a common medium for investment and the amounts to be allocated for that purpose. The senior doctors may lean toward an annuity plan with heavy dollar commitments, whereas the younger partners with already heavy financial burdens may favor stock investments or a fund purchase plan with lower contributions.

If a tax benefit can be realized, certainly a compromise should be reached, but we would all agree on the imprudence of compromising a financial plan if no such advantage existed. In the absence of this tax advantage, certainly each doctor should pursue his own financial goals.

What are the potential tax benefits available? The prospects of a corporation or association for the two- to four-man group appear dimmer than at any time in the past. This leaves the Self-Employed Retirement Plan, which presently offers only a minimum tax advantage. If and when the law governing these plans becomes more favorable, their advantages will increase. However, under present law, they offer only a small advantage to those in the right financial situation.

On the premise that the primary goals for a partnership are improved medicine and greater ease of practice, there would seem to be little justification for a partnership to assume an ever-increasing responsibility for the individual partner's personal financial planning. We feel that this position will be logical unless or until there is an appreciable financial or tax benefit to be gained through a collective approach to financial planning.

Autumn Postgraduate Programs at S.U.I.

RADIOLOGY

There is no registration fee for members of the Iowa Radiological Society. For non-members, the fee is $10. This program is accredited for 4 hrs. by the American Academy of General Practice.

Saturday, September 19

3:00 p.m. BUSINESS MEETING, IOWA RADIOLOGICAL SOCIETY
5:00 p.m. COCKTAILS AND DINNER

Sunday, September 20

10:00 a.m. "Urologic Changes in Patients With Myelomeningoceles"—E. F. Van Epps, M.D.
"Infusion Pyelography"—J. R. Thornbury, M.D.
"Renal Arteriography"—S. H. Cornell, M.D.
"Cholesteatomas"—R. A. Lee, M.D.

11:00 a.m. "X-ray Findings in Mesenteric Vascular Disorders"—E. Hierschbiel, M.D., Mercy Hospital, Iowa City
"Laryngography: Technic and Some Cases"—J. I. Gardner, M.D.
"Volvulus of the Stomach"—E. Newman, M.D.
"Recent Advances in Radioactive Isotope Scanning"—B. E. Peterson, M.D.

12:00 noon LUNCH

1:00 p.m. "A Look at Radiology in Scandinavia"—H. W. Fischer, M.D.
"Femoral Arteriography"—Kenneth D. Dolan, chief of radiology, VA Hospital, Iowa City
"Lymphography in Cancer-Treatment Planning"—Dr. Thornbury
"Intradural Lipomas and Sacral Agenesis"—Gilbert J. Roller, M.D., Cedar Rapids

2:00 p.m. "Complications of Treatment Following Radiation Therapy for Carcinoma of the Cervix"—A. F. Schroeder, M.D.
"Mammography—Technic and Results in Proved Cases"—A. C. Hass, M.D.
"Treatment of Tumors of the Oral Cavity"—R. E. Levis, M.D.
"Limits of Movement Between the Axis and Atlas in Normal Young Children"—G. R. Locke, M.D.
"The Place of Brain Scans in the Neuroradiologic Workup"—R. E. Bethards, M.D.

OTOLARYNGOLOGY FOR THE GENERAL PRACTITIONER

The registration fee for the conference is $10. This program is accredited for 5½ hrs. by the American Academy of General Practice.

Friday, October 2

9:00 a.m. "The Stuffy Nose"—Brian F. McCabe, M.D., newly-appointed head of the S.U.I. Department of Otolaryngology and Maxillofacial Surgery

9:40 a.m. "Acute and Chronic Otitis Media"—James A. Donaldson, M.D.

10:20 a.m. QUESTION AND ANSWER PEORID

11:10 a.m. "Current Drug Therapy in Otolaryngology"—Leslie Bernstein, M.B., B.Ch., B.D.S.

11:40 a.m. "Lacerations and Fractures of the Face"—William C. Huffman, M.D.

12:10 p.m. LUNCHEON

1:30 p.m. "Modern Conservative Surgery for Carcinoma of the Larynx"—Donald A. Shumrick, M.D.

2:00 p.m. "Hearing Tests for the General Practitioner"—Scott N. Reger, Ph.D.

2:30 p.m. "Indications for Tonsillectomy and Adenoidectomy"—Dr. Donaldson

3:30 p.m. "The Hoarse Patient"—Edwin N. Rise, M.D.

Iowa Association of Medical Assistants

Sixth Annual In-Service Workshop

The Continuing Education Program of the State University of Iowa offers this sixth annual training workshop for medical assistants in the State of Iowa. This workshop offers an educational opportunity to those assistants who wish to up-grade themselves in their business and routine office activities. This up-grading in office responsibilities should also develop them into more valuable employees for their physicians.

Monday, October 5

8:30 a.m. WELCOME—Dr. W. D. Coder, coordinator of conferences, Extension Division, State University of Iowa
"Human Behaviour and Its Causes: Why Adults Behave as They Do"—Mr. Don Sherrif, Bureau of Labor and Management, S.U.I.

1:15 p.m. "Child Psychology: Why Children Behave as They Do"—Dr. Ralph Ojeman, Child Welfare Research Station, S.U.I.

Tuesday, October 6

8:30 a.m. "The Importance of Proper English Usage" —Dr. Coder

10:00 a.m. "Spelling and Punctuation"—Dr. Coder

1:15 p.m. "Business Letters"—Dr. Norman Kallous, Department of Office Management, S.U.I.

3:00 p.m. "Reception Technics and Appointment Making"—Miss Edith Ennis, Business and Economics Research Dept., S.U.I.

Wednesday, October 7

8:30 a.m. "Legal Problems in the Physician's Office" —Prof. Sam Fahr, College of Law, S.U.I.

1:15 p.m. "Proper Use of the Telephone"—Representative of the Northwestern Bell Telephone Company

Registration will start at 4 p.m. on Sunday, October 4, at the Continuation Center on the S.U.I. Campus. At 6:15 p.m. an orientation dinner will be served at Bill Zuber's Restaurant in Homestead, one of the Amana Colonies.

The $35.00 fee for this workshop pays for housing at the Iowa Center for three nights beginning Sunday, October 4; for breakfasts, Monday through Wednesday morning; for the Sunday night orientation dinner at Bill Zuber's; for the mid-morning and mid-afternoon coffee breaks; for all instructional materials and for an attendance certificate.

Enrollment is limited to the first 50 applicants, and is NOT LIMITED TO IAMA MEMBERS. Fliers for this workshop are being mailed to IAMA members and to members of the Iowa Medical Society. Full information regarding registration will be given in the flier.

In addition to the program outlined above, the Iowa City District Association of Medical Assistants has scheduled activities for Monday and Tuesday evening. On Monday, registrants will be taken on conducted tours of three medical offices in the community and will be shown their facilities and various types of filing procedures, bookkeeping and accounting equipment, and office arrangements. On Tuesday evening, the registrants are invited to attend the dinner meeting of the Iowa City Chapter to be held at the Mayflower Inn. Local medical advisors and their wives, and Dr. and Mrs. Coder, will be guests, and entertainment will be presented following the dinner.

This workshop offers much to the medical assistant. It gives basic instruction in the skills necessary in the modern medical office. In addition to presenting these fundamentals to the new medical assistant in her first job, it brings to the career medical assistant a refresher course and instruction in new technics and office procedures.

All classes are conducted by S.U.I. faculty members, and in past discussion periods following each class, the exchange of information and ideas has been most profitable. Consider this as an investment in your future. PLAN NOW TO ATTEND—REGISTER EARLY. REMEMBER, IOWA CITY—S.U.I.—OCT. 4-7, 1964.

Our first Leadership Training Seminar at Kepler Park in June was well attended and enthusiastically received. Plans for our second Seminar, in the Ft. Dodge area during September, are nearly completed. Fliers have been sent to each chapter president. Check with your local president for details, or write to this correspondent at P.O. Box 6064, Coralville, Iowa 52243.

HELEN G. HUGHES

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

Morbidity Report for Month of July 1964

Diseases	1964 July	1964 June	1963 July	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	124	177	110	Dubuque, Jefferson, Johnson
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	55	562	203	Dubuque, Polk, Pottawattamie, Poweshiek, Scott
Whooping cough	12	0	6	Polk, Scott
Brucellosis	14	7	8	Dubuque, Scott
Chickenpox	63	183	124	Clay, Dubuque, Polk, Scott
Meningococcic meningitis	0	3	1	
Mumps	181	346	133	Boone, Clay, Dubuque, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	6	13	17	Polk, Scott
Rabies in animals	47	53	46	Entire state
Malaria	0	0	1	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	23	17	33	For the state
Syphilis	89	91	48	For the state
Gonorrhea	106	115	84	For the state
Histoplasmosis	1	88	0	Polk
Food intoxication	0	0	0	
Meningitis (type unspecified)	3	0	0	Carroll, Howard, Story
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	1	1	Des Moines
Salmonellosis	2	8	22	Hardin
Tetanus	1	0	0	Des Moines
Chancroid	0	0	0	
Encephalitis (type unspecified)	2	0	0	Johnson, Linn
H. influenzal meningitis	1	0	0	Woodbury
Amebiasis	0	2	1	
Shigellosis	3	3	0	Des Moines
Influenza	2	49	0	Polk

Influenza Immunizations 1964-1965

The Advisory Committee on Immunization Practice of the U. S. Department of Health, Education and Welfare, has just released its recommendations for influenza immunizations and control for 1964-1965:

"*Influenza* A_2—Widespread outbreaks of influenza A_2 occurred in 1962-1963 in most areas of the United States except for the West Coast. During 1963-1964 influenza A_2 was widely prevalent along the West Coast; limited outbreaks occurred also in southern Minnesota. Although influenza A commonly occurs in two or three year cycles, it would seem, in the face of the extensive 1962-1963 outbreak and the West Coast involvement in 1963-1964, that a major outbreak would be unlikely this year. As in other inter-epidemic years, however, focal outbreaks might be anticipated.

"*Influenza B*—A nation-wide epidemic of influenza B was last observed in the United States during 1961-1962. During 1963-1964, influenza B in epidemic proportions was observed in Japan. The strain involved was related to previous strains isolated in the United States and was unrelated to the sharply modified B strain recovered in Taiwan in 1962 during an institutional outbreak. This strain has not since been isolated. Possibilities that the Japanese influenza B epidemics might herald outbreaks on the West Coast during the coming year or that the Taiwan B strain might reappear cannot be completely dismissed. It seems unlikely, however, in view of the relatively rare occurrence of major epidemics of influenza B, that the United States would experience more than scattered, limited outbreaks of influenza B during 1964-1965."

Although the above paragraphs explaining the expected incidence of influenza for the coming year are presented as a quotation, the remainder of the material is summarized in order to economize on space:

HIGH RISK GROUPS—Even though, at this time, large-scale epidemic outbreaks of influenza are not anticipated for the coming winter, immunization of special groups against influenza is still strongly advised. Patients in the following categories have experienced the highest influenza mortality rates and therefore should have specific protection as a routine practice:

A. Persons at all ages who suffer from chronic debilitating disease; e.g., chronic cardiovascular, pulmonary, renal or metabolic disorders; in particular:

1. Patients with rheumatic heart disease, especially those with mitral stenosis.

2. Patients with other cardiovascular disorders, such as arteriosclerotic heart disease and hypertension, especially those with evidence of frank or incipient cardiac insufficiency.

3. Patients with chronic bronchopulmonary disease; for example, chronic asthma, chronic bronchitis, bronchiectasis, pulmonary fibrosis, pulmonary emphysema, pulmonary tuberculosis.

4. Patients with diabetes mellitus and Addison's disease.

B. Pregnant women.

C. Persons in older age groups; those over 45 and particularly those over 65.

Serious consideration should also be given to immunizing those in medical and health services, public safety, public utilities, transportation, education and communications fields. In industries and large institutions where absenteeism is of particular concern, large-scale immunization programs are to be encouraged.

VACCINE—Recent isolates of both the A and B strains demonstrate a continuing alteration in antigenic structure. Accordingly, it is noted that more recent strains of both the influenza A_2 and B strains have been added in increased amounts. The antigenic composition of the vaccine for the 1964-1965 season is as follows:

Type	Strain	CCA Units Per cc.
A	PR8	100
A_1	Ann Arbor 1/57	100
A_2	Japan 170/62	200
B	Maryland 1/59	200
		600

IMMUNIZATION SCHEDULE AND DOSAGE—Immunization should begin as soon as practicable after September 1, and should be completed by mid-December. Since a two-week delay in the development of antibodies may be expected, it is important that immunization be carried out before epidemics occur in the immediate areas.

Primary Series—Those not vaccinated since July 1963 should receive a subcutaneous dose of polyvalent vaccine followed by a second dose about two months later. It is to be pointed out, however, that even a single dose can afford significant protection; a second dose given as early as two weeks following the first will enhance the protection.

Revaccination—Those revaccinated since July 1963 need receive but a single dose of the vaccine.

Dosage—

Adults and children over 12—1.0 ml. (600 CCA units)

Children 6 to 12 years*—0.5 ml. (300 CCA units)

Children 3 months to 5 years*—Primary series should consist of 0.1-0.2 ml. (60-120 CCA units) of vaccine given subcutaneously on two occasions separated by one to two weeks followed by a third dose of 0.1-0.2 ml. about two months later. For those previously vaccinated, a single booster of 0.1-0.2 ml. is recommended.

CONTRAINDICATIONS—Since the vaccine viruses are produced in eggs, the vaccine should not be administered to those who are hypersensitive to eggs or egg products.

* Since febrile reactions in this age group are common following influenza vaccine, an antipyretic may be indicated.

Local Treatment of Rabies-Infected Wounds*

Prompt local treatment of all wounds inflicted by rabid animals—and in particular of superficial bites—is often decisive in blocking the spread of rabies virus to the central nervous system, and indeed may even kill the virus on the spot. The value of this first aid method does not appear as yet to have been fully appreciated.

Together with studies on the prevention of rabies by vaccination and serotherapy, the results of research on the local treatment of rabies-infected wounds have frequently been published in the BULLETIN OF THE WORLD HEALTH ORGANIZATION over the past few years. Further studies in this field are reported in three papers in a recent issue.

The authors of the first paper[1] once again stress the value of promptly washing scratches, lacerations, or superficial bites inflicted by rabid animals with tap water and with soap or water to which a suitable chemical substance has been added, or of swabbing or washing them with antirabies serum. These measures can appreciably reduce the risk of rabies infection, and are particularly important if there has been any delay in the arrival of a doctor. To obtain experimental proof of the effectiveness of such local treatment, the authors inoculated guinea-pigs and rats with rabies virus. The animals were treated at varying intervals of time after inoculation and by different methods, and there was an untreated control group.

The statistical analysis of the results leaves no doubt as to the effectiveness of the local application of certain substances. Local anaesthetics in oil (particularly procaine hydrochloride and dibucaine hydrochloride) and benzalkonium chloride interfere with motor function and have a marked protective effect. Benzalkonium chloride seems both to have a blocking effect and to kill the virus on the spot. It is known that virus injected intramuscularly in animals diminishes rapidly in titre, but may remain viable at the site of inoculation for 48-96 hours. Accordingly, blocking agents may impede the transmission of virus up the nerve trunk long enough to allow the virus titre to drop below the infectious threshold. The study of this blocking effect and its mechanism is continuing.

The second article[2] describes trials of the effectiveness of quaternary ammonium compounds,

* WHO CHRONICLE, Vol. 18, No. 7, July, 1964.

[1] Dean, D. J., Baer, G. M., and Thompson, W. R.: BULL. WLD. HLTH. ORG., 28:477, 1963.

[2] Wiktor, T. J., and Koprowski, H.: BULL. WLD. HLTH. ORG., 28:487, 1963.

ethyl alcohol, local anaesthetics, antihistamines, and tranquilizers in preventing the spread of rabies virus in mice infected by intraplantar inoculation. Only certain quaternary ammonium compounds and ethyl alcohol appear to inhibit the spread of the virus. Although the exact mechanism of action of these substances has not yet been elucidated, in case of quaternary ammonium compounds it is possible that inactivation of the virus occurs at the point of injection and in its immediate neighborhood, for the six compounds—out of 16 studied—that were found to be effective in vivo were also those that inactivated the virus in vitro. The mode of action of ethyl alcohol seems to be much more complex, since a concentration with no virucidal action in vitro proved remarkably active in vivo. Moreover, the mice that survived developed an appreciable degree of immunity. Further studies of these findings will be conducted.

Finally, a study of the effectiveness of locally inoculated antirabies serum and gamma globulin in mice infected by intraplantar injection[1] gave the following results: Anti-rabies serum and, to a lesser extent, gamma globulin exert a protective action when injected at the same point as the rabies virus, one hour after infection. Some protection is also apparent when inoculations are made up to three hours after infection, but none could be demonstrated when there was a six-hour interval. A prophylactic injection in the opposite paw one hour after infection seems to have afforded a certain degree of protection, but a similar injection six hours after infection had no effect.

Course for Food Service Personnel

In Iowa, three-fourths of the hospitals and all of the nursing homes are without the full-time services of trained dietitians.

The importance of food to the health and welfare of patients cannot be underestimated. The Iowa State Department of Health throughout the year works through the administrators to help to train employees and give technical assistance to them in an endeavor to upgrade the quality of food served to patients and personnel.

One important phase of this work is the "Short Course for Food Supervisors" held each year at Iowa State University. This year the seventh short course was held during the week of July 12-18. The State Board of Control was a cosponsor with the Iowa State Department of Health.

This year 88 cooks and food supervisors from 31 hospitals, 23 nursing homes and 11 of the state institutions attended the short course.

The Iowa State Department of Health recruited the students from the hospitals and nursing homes and members of the staff served on the faculty in this endeavor to give training to food service employees is that the quality of food served could be improved.

Diuretic Aids Diagnosis as Well as Treatment of Heart Failure

The use of a thiazide diuretic has been shown to corroborate a diagnosis of heart failure as well as to aid in its treatment. In a study recently completed by Maxwell L. Gelfand, M.D., and Louis Goodkin, M.D., of the New York Infirmary, patients suspected of having heart failure were given a therapeutic trial with polythiazide (Renese) and the improvement of symptoms aided in corroboration of the diagnosis. They reported their findings in a scientific exhibit during the 113th annual meeting of the American Medical Association in San Francisco June 21-25.

Dr. Gelfand and Dr. Goodkin found that the administration of a non-cardiac acting diuretic removes edema fluid, decreases vascular congestion, lowers intravascular and intracardiac pressure, increases cardiac output and relieves other symptoms of congestive failure.

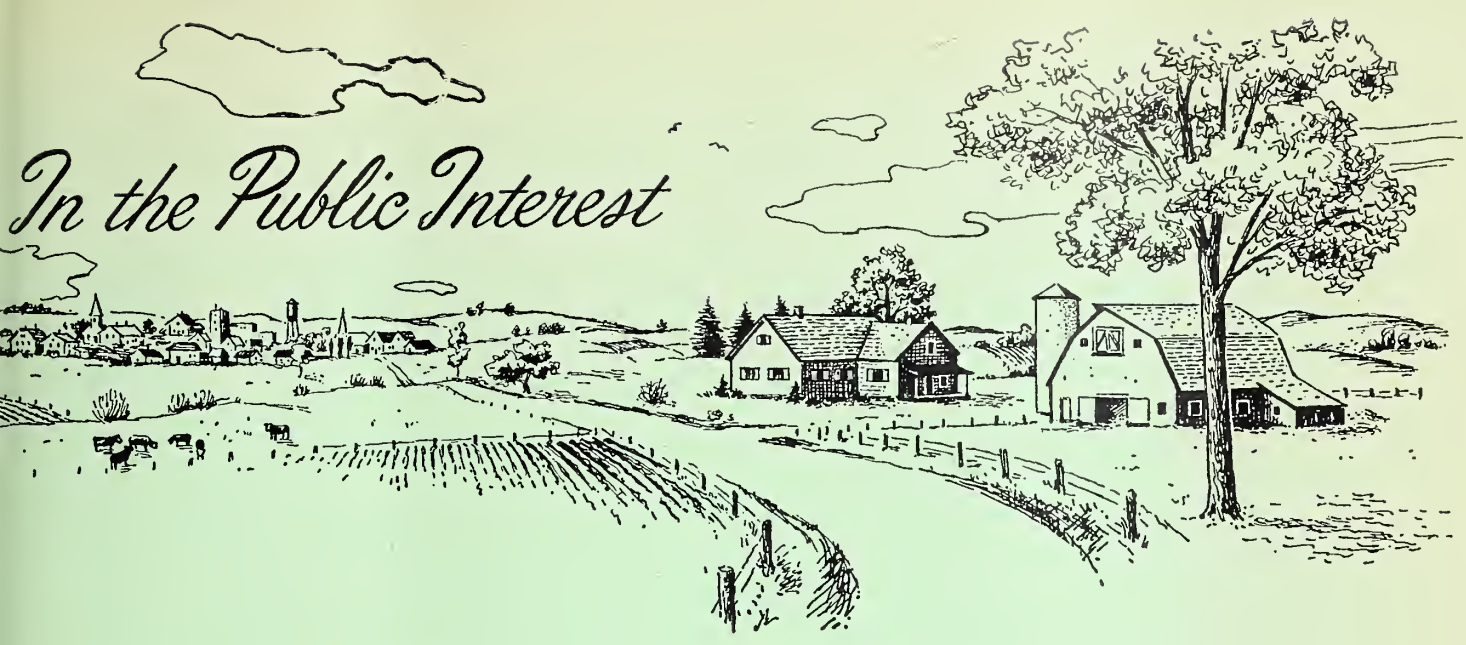
Early recognition and treatment, the doctors believe, will avoid pulmonary edema. Furthermore, they conclude, when in doubt, use a diuretic.

The early detection of heart failure is one of the goals of clinical diagnosis. To be able to pinpoint the earliest indications would make it possible for the physician to institute appropriate therapy and forestall the serious consequences of advanced cardiac disfunction.

A number of symptoms and signs, Dr. Gelfand and Dr. Goodkin point out, are not generally recognized as clues in the diagnosis of cryptic, or subclinical heart failure. Among these, a positive response to a therapeutic trial of an oral diuretic supports the diagnosis of heart failure. They indicated that the chief manifestations of overt heart failure are classic, but in cryptic, or subclinical heart failure, the mechanical efficiency of the heart is only partially impaired, as a result of which the myocardium cannot fully furnish the metabolic needs of the tissues. Early diagnosis and treatment, however, can forestall more advanced heart failure with its serious consequences.

Although there is some difference of opinion concerning the fundamental cause of chronic congestive heart failure and several major theories are current, the retention of salt and water is a common factor. "This is probably the most important cause of edema and weight gain in heart failure," they said.

Polythiazide is a potent natruretic agent with a more favorable sodium-to-potassium ratio of excretion than other thiazide diuretics, Dr. Gelfand and Dr. Goodkin concluded. A weight loss of at least three pounds in 24 hours can be observed when polythiazide is employed. The compound has a duration of action of at least 36 hours. The study indicates that a thiazide diuretic can fill two roles—to aid in diagnosis and to continue in treatment.



Physicians Are Asked to Take the Lead in

Implementing Medical Civil Defense at the Local Level

Within the next few weeks, the Division of Health Mobilization of the State Department of Health is to initiate a series of programs, principally for physicians, that will call attention to the steps that each community must take to assess and augment its health care facilities and personnel for service following a nuclear attack or major natural disaster. A statewide meeting for that purpose will be held in Des Moines late this fall, and area workshops under the leadership of local doctors are to follow. Besides the State Office of Civilian Defense, the cooperating organizations will include the Iowa Interprofessional Association (consisting of the Iowa Medical Society, the Iowa Dental Association, the Iowa Veterinary Medical Association, the Iowa Hospital Association, the Iowa Nurses Association and the Iowa Pharmaceutical Association), and the Iowa Osteopathic Society.

IOWA HASN'T STOOD STILL

If a crisis resembling that of the Russian missiles in Cuba were to occur tomorrow or next week—if the President of the United States were to find it necessary, as in October, 1962, to mobilize troops and weapons for immediate action, and all of us began listening again for the wail of air raid sirens—we couldn't find complete reassurance in the progress that has been made in our civil defense preparedness. Yet, considerable has been accomplished.

To date, in Iowa alone, 704 radiologic detection and measurement stations have been established, and 1,982 people have been trained to operate them. Eighty-eight of Iowa's 99 counties have plans for emergency radio communication, and 876 operators have been enlisted to staff the stations. Each county in the state—at least on paper—has a medical and paramedical committee to manage mass casualties, there are 36 city-county defense agencies, and 1,600 buildings have been marked as public shelters.

Under the federally financed Medical Education for National Defense (MEND) program, the S.U.I. College of Medicine has distributed copies of the NATO handbook EMERGENCY WAR SURGERY to third-year medical students, and some lectures have been given them on the management of mass casualties.

Nineteen mobile emergency hospitals have been prepositioned in the state, each rated as capable of serving 200 patients for a 30-day period. More significantly, perhaps, some of our permanent hospitals have made plans for disaster medical care and the associated problems of transporting and sorting patients, and a few of them have conducted drills to test their schemes and to train the additional personnel that would be needed.

A commendable beginning has been made at teaching the Medical Self-Help course, a uniform set of lectures and practice exercises developed by the USPHS Division of Health Mobilization, in cooperation with the Office of Civilian Defense, the military and the American Medical Association, and intended to enable lay people to meet medical emergencies when a physician is not immediately available. The goal of that program is to train a minimum of one person in each family to cope at least temporarily with fractures and lacerations,

asphyxia and other acute respiratory difficulties, burns, shock, sanitation problems and childbirth. Throughout the past three or four years, the course has been taught principally by public health nurses, though in some instances by physicians, and the classes have consisted chiefly of adult enrollees. During the six-month period from January 1 to June 30, 1964, in Iowa, 60 Medical Self-Help classes were completed, and 1,263 persons were trained.

PROGRESS MUST BE STEPPED UP

All these beginnings are commendable, but they are no more than beginnings. Apathy is general, not only among laymen but throughout the professions that must exercise leadership in these preparations. Though disaster-care committees have been appointed both at the state and at the local level, essential drills have been conducted only once or twice in each community, or not at all. The importance of such exercises has been shown repeatedly by the confusion and inefficiency that have marred first attempts. Key vacancies on committees or in disaster-care staffs have occurred when people have either moved away or died, and the gaps haven't been filled. Equipment, in some instances, may have become inoperable with the passage of time.

Iowa's most pressing need, the State Health Department thinks, is for communities or groups of communities to reassess their disaster-care plans and resources. Each city, county or multi-county group should update its plans for the efficient use of all its hospitals, fire-fighting equipment, and health-care personnel of all types for either a nuclear attack or a major disaster of any other sort. Each such unit, moreover, should make coordinated and sustained efforts at recruiting and training the lay people on whom the success of the emergency arrangement will largely depend, and should instill an esprit de corps in them. Adequate immunizations must be encouraged, and if necessary they should be provided on a mass basis.

The distribution of war-surgery texts to the juniors at the S.U.I. College of Medicine and the lectures that are being given them on the care of mass casualties are admirable, but it must be remembered that from two to four years will elapse before any of those third-year students move into Iowa towns as medical practitioners. The S.U.I. faculty members intend shortly to bring the residents at University Hospitals into the MEND program, and as soon as possible to start postgraduate short courses on the care of mass casualties for practicing physicians.

Three or four thousand graduates a year from the Medical Self-Help course aren't nearly enough to provide one trained person to every family group in the state. For that reason, the Division of Health Mobilization of the State Health Department has secured the help of Mr. Paul Johnson, the state superintendent of public instruction, in getting the course introduced into public school systems. Eventually, it is hoped, the course can be made a required one. Because individual school districts are largely autonomous, the State Health Department and Mr. Johnson will appreciate whatever help physicians can give them in persuading local school boards to their point of view. Thus far, about 40 schools have put the course into their curricula.

The 19 mobile emergency hospitals are stored at carefully selected places and are ready, but they can't be used in relatively minor difficulties, and many of them have yet to be staffed. Lest the components of these hospitals be scattered and their supplies depleted, with the result that they no longer constitute resources for a nuclear emergency, communities are expected to have other facilities ready for use following a tornado, a plane, bus or train wreck, a fire or a mass food-poisoning. After the earthquake last spring in Anchorage, Alaska, permission was secured for the use of parts of a mobile emergency hospital, but that occasion was exceptional. Thus, two separate tasks must be undertaken: (1) Permanent facilities and both regular and extra personnel must be organized and trained for service in disaster situations; and (2) Staffs for mobile emergency hospitals must be recruited and must be trained at one or the other of the two practice installations in the state.

DOCTORS SHOULD PLAN TO ATTEND THE DES MOINES MEETING

At the two-day meeting in Des Moines, probably in November, physicians and other civic leaders will be brought up-to-date, as fully as possible, regarding the problems with which their towns or districts may have to deal following a lesser or a nuclear catastrophe. They will be familiarized with the steps they can take in organizing for such emergencies, and in particular they will be asked to plan the recruiting and training of ancillary personnel. The final half-day of the meeting will be devoted to an exercise in setting up and operating a portion of one of the mobile emergency hospitals.

Invitations will be issued to representative physicians throughout the state, but whether invited or not, all physicians are encouraged to attend. For those who wish more detailed instruction, the USPHS conducts week-long courses several times during the year, in cooperation with the Armed Services, and either the IMS headquarters or the Division of Health Mobilization of the State Department of Health can provide all necessary information about them.

Iowa Chapter of the
American Academy of General Practice

Symposium on Infectious Diseases and State Officers' Conference

On Friday, September 18, the American Academy of General Practice and the University of Kansas School of Medicine, under a grant from Lederle Laboratories, will present a Symposium on Infectious Diseases at the Battenfeld Memorial Auditorium in Kansas City, Kansas. All physicians are invited to attend, and there will be no registration fee. A report on clinical experience with measles vaccine, diabetes and venereal disease, and a report on airborne infections will be among the talks presented. Also included will be a report on infections of the eye and a discussion of "Fever of Unknown Origin." The Symposium has been approved for six credit hours.

Following this Symposium, on Saturday and Sunday, September 19 and 20, "Steamboat 'Round the Bend" will be the watchword of the 1964 State Officers' Conference, when the *SOC Showboat*, under Captain U. S. Marshall, steams into Kansas City's Muehlebach Hotel. The 1964 sessions will include a keynote address by Charles E. Whittaker, associate justice of the United States Supreme Court (retired); a look at current legislation through the eyes and intellect of Congressman Thomas B. Curtis (Rep., Mo.); and a discussion of the Academy's position within organized medicine by Dr. R. B. Robins, a past-president of the Academy and a former member of the Board of Trustees of the AMA. In the field of medical education, a former Mead Johnson Award winner, Dr. Ben F. Banahan, will look at "A GP Residency in Perspective." Other speakers will discuss liaison with medical schools and hospital staff privileges.

Dr. Edward Annis, immediate past president of the AMA will present his opinions regarding "The Future of General Practice" in the opening talk on Saturday morning. Dr. Nicholas Pisacano, secretary to the AMA Section on General Practice, will discuss "General Practice in the Future," at the same session.

Officers of the Iowa Chapter will be in attendance at the Saturday and Sunday sessions, and all AAGP members who have attended the Symposium on Infectious Diseases are encouraged to stay for the fine programs to be presented on those last two days.

Precautions for Pre-Season Football Practices

Special precautions should be observed before taking heavy physical exercise during hot weather, until one becomes acclimatized to it. Otherwise one may be subject to (1) heat exhaustion due to depletion of salt and water from excess sweating, or (2) heat stroke, overheating due to lack of sweating. In heat exhaustion, chief symptoms are weakness and faintness. Unconsciousness may occur. Sweating may be profuse, but the body temperature undergoes little or no change. In heat stroke, the temperature rises rapidly. Sweating may suddenly stop. Immersion in a tub of ice water until the body temperature falls below 103°F. is helpful. A delay of even a few minutes in reducing the temperature may be fatal.*

To help prevent heat exhaustion and heat stroke during hot-weather athletic activity, it is suggested that coaches:

1. Require a careful medical history and check-up prior to the start of practice.
2. Schedule workouts during cooler morning and early evening hours in hot weather.
3. Acclimatize athletes to hot-weather activity by carefully graduated practice schedules.
4. Provide rest periods of 15 to 30 minutes during workouts of an hour or more in hot weather.
5. Supply white clothing (to reflect heat) which is loose and comfortable (to permit heat escape) and permeable to moisture (to allow heat-loss via sweat).
6. Furnish extra salt and water in recommended amounts during hot weather.
7. Watch athletes carefully for signs of trouble, particularly the determined youngster who may not report discomfort.
8. Remember that the temperature and humidity, not the sun, are the important factors. Heat exhaustion and heat stroke can occur in the shade.

(Additional copies of these suggestions are available from the AMA Department of Community Health and Health Education, 535 North Dearborn Street, Chicago 60610. Ask for "Tips on Athletic Training V.")

* T. R. Harrison, M.D., in "Questions and Answers," J.A.M.A., Oct. 20, 1962.

Woman's Auxiliary News

Thoughts From the President

Sympathetic as Franklin Roosevelt was to the needs of the depression victims, he said in 1935: "The lessons of history . . . show conclusively that continued dependence upon relief induces a spiritual and moral disintegration fundamentally destructive to the national fiber. To dole out relief . . . is to administer a narcotic, a subtle destroyer of the human spirit. . . . The federal government must quit this business of relief."

Since this statement was made, public assistance programs have expanded and at even a more rapid pace than has our crime rate. Subsidized idleness contributes to shiftlessness, which in turn breeds more crime, and this in turn results in bigger, more elaborate welfare programs. People have not been made better simply by giving them dollars from the federal government. The old virtues of private philanthropy and local community responsibility may be sneered at as having been mere sentimental "bosh," but it certainly did not have the dismaying results of the new approach. Public welfare expenditures for the 10-year period of 1950 to 1960 increased 170 per cent, though the population increase for that period was only 20 per cent. In the category of public assistance, expenditures during the same period increased 69 per cent, but administrative expenses for dispensing this dole increased 157 per cent.

Before we accept the mass of new welfare proposals, perhaps the people and the planners might reflect on the lessons of history.

Where the mind is without fear and the head is held high;
Where knowledge is unfettered;
Where the world has not been broken up into fragments by narrow domestic walls;
Where words come out from the depths of truth;
Where tireless striving stretches its arms towards perfection;
Where the clear stream of reason has not lost its way into the dreary desert sand of habit;
Where the mind is led forward into ever widening thought and action—
Into that heaven of freedom, my Father, let my country awake.

R. TAGORE

Des Moines Conference on Medical Quackery

Real progress has been made in the continuing battle against medical quackery and food faddism. Even so, the "modern day medicine man" is still very much in evidence. He is a serious menace to public health and sound medical practice.

It was my privilege to attend the Conference on Medical Quackery held at the Hotel Fort Des Moines on May 27. The Conference was sponsored by the Iowa Interprofessional Association, and education of the public on facets of medical quackery was its main purpose. About 200 persons attended.

The current American Medical Association campaign against quackery in medicine was described by Oliver Field, director of the AMA's Department of Investigation. That Department had its beginning in 1906. It makes a dedicated effort to enlighten the public as to the dangers of quack remedies, and assists in putting the promoters of these remedies out of business. Through publications such as TODAY'S HEALTH, the bi-weekly AMA NEWS and a variety of pamphlets and brochures, the AMA is attempting to educate the public. Device quackery, according to Field, is one of the older forms of medical chicanery, but it has been given new life with the progress in electronics and the development of the do-it-yourself machines.

Nutritional quackery, he reported, is probably the most lucrative area for the medical huckster. The Food and Drug Administration launched a campaign several years ago to call the attention of the American public to the many dietary fads which purport to improve health. In spite of this FDA activity and the efforts of the AMA and other groups many people continue to waste their money on unprescribed vitamins and minerals.

Dr. John G. Thomsen, of Des Moines, chairman of the AMA's Committee on Quackery and a member of the executive council of the Iowa Interprofessional Association, summarized the medical profession's opposition to chiropractic practice. The scope of chiropractic should not be broadened, he said, for a number of reasons including: (1) The chiropractic theory of cause and cure of disease runs counter to so many established facts of medical science. The advances of modern medicine have been made without consideration of such a theory. (2) The educational programs pro-

vided by schools of chiropractic are far from comparable with those of the schools of medicine. (3) Human beings are entitled to a single high standard of training and proficiency in those who would practice medicine in any way.

Dr. Martha F. Trulson, associate professor of nutrition at Harvard University, cited the desire to stay young as a principal reason why people become food faddists. She again stressed the need for disseminating knowledge of nutritional facts. There are several obstacles, Dr. Trulson said, which make us vulnerable: (1) Submission to faulty and unworthy authority; (2) Pronouncements by influential people who are not knowledgeable in the nutrition field; (3) Customs and prejudices as to acceptance of food; and (4) Natural-food faddists who employ hard-sell technics. Steps are being taken to make authoritative reading about nutrition more interesting to the public.

Alfred Barnard, director of the Kansas City District of the Food and Drug Administration, outlined the role of his law enforcement agency in the control of foods, drugs and cosmetics. Federal control of these items has existed since 1912, but it was the law passed in 1938 which has become the strong weapon against quackery. Even so, it still is usually necessary to undertake lengthy and costly litigation when a suit is brought to remove a device or medication from the market.

Nutritional quackery sends the largest amount of money down the drain, Barnard said. Senior citizens are particularly vulnerable in this area. Products are classified as drugs if their labels contain claims regarding nutritive value. To cite one extreme claim, the advertising literature asserted that one item would cure juvenile delinquency, among other things.

Many new and pretty healing devices are on the market now. One, a particularly attractive bracelet imported from Japan, it is contended, is capable of curing arthritis and other diseases for the wearer.

The most important weapon against quackery, Barnard declared, is education. The real challenge lies in the development of an educational program.

Attorney-General Evan Hultman explained that medical-practice acts exist for the protection of the public against unskilled treatment of the sick or diseased by persons having neither the preparation nor the skill to diagnose disease or to administer powerful and poisonous drugs. He cited the close, and effective, working relationship between the attorney general's office, the other departments of the government and the professional agencies which are outside of government. Voluntary interest and effort on the part of the public in general is important in eliminating the medical quack.

R. F. Rabe, D.D.S., member of the Iowa Dental Association's Board of Trustees, indicated that most quackery in his field consists of the faulty practices of denture technicians who operate without licenses.

Lloyd Coe, executive secretary of the Iowa Hospital Association, said that quackery in hospitals has been curbed through several means: state licensure; establishment by the IHA and AHA of a code of conduct; more effective medical record-keeping; improvement in the quality and training of staff physicians; and better maintenance of the physical plant to meet accreditation standards.

Kenneth E. Lister, M.D., secretary of the Iowa Medical Society's Judicial Council, indicated that physicians are governed by the Code of Hippocrates. This Code includes 10 general principles, seven of which deal with protection of the public. The Grievance Committee and the Judicial Council of the IMS exist to settle problems which may occur in the medical profession in Iowa.

Vera Sage, R.N., executive director of the Iowa Board of Nursing, reported that a revised Nurses Practice Act went into effect July 4, 1963. She reviewed the three main functions of the Board of Nursing: (1) the licensure of the practitioner; (2) the review and re-evaluation of the qualifications of nurses, carrying out disciplinary measures as necessary to enforce the law; and (3) education to improve the quality of nursing.

Robert Gibbs, executive secretary of the Iowa Pharmaceutical Association, described four basic pharmaceutical services: (1) operation of the pharmacy; (2) preparation of prescriptions for medicine; (3) selling of drugs; and (4) other operations requiring the use of the pharmacy. Pharmacies are regulated by the law and by a code of ethics which is reviewed annually.

F. E. Beaver, D.V.M., president of the Iowa Veterinary Medical Association, said that his profession concerns itself with the testing and treating of cattle, swine and other animals; insuring that food products are disease-free; diagnosing rabies; and other steps designed for the eventual elimination of the disease.

Dr. Robert J. Samp, a member of the University of Wisconsin Medical School faculty, speaking at the conference luncheon, departed somewhat from his topic—"Cancer Quackery 1964: Mulcting, Chicancery and Charlatanism" and gave an inspirational talk about the need for continual self-examination by those in the medical and paramedical fields.

Dr. W. D. Paul, medical chairman of the Iowa Chapter, Arthritis and Rheumatism Foundation, and a member of the SUI College of Medicine faculty, discussed quackery and its relation to these diseases, during the afternoon program. He said that one of the factors which makes arthritis vulnerable to quackery is the occurrence of exacerbations and remissions. Thus, persons with arthritis have periods when they are better, and periods when they are worse, and they can never

be sure when either will occur. Consequently, when they are moving from a bad period to a good period, anything they do or take in terms of treatment or medication will seem to them to have lessened their arthritis, and they are thus likely to become walking testimonials for a worthless remedy.

Brief explanations of how better business bureaus, the press, and radio and television stations attempt to cope with advertisers of fraudulent medical products and practices were presented by representatives of these agencies.

The closing remarks by Dr. Arthur Long, the newly appointed acting commissioner of health for Iowa, concluded a day that left us with the feeling that it will take all of us to curb quackery, and that we must step up our efforts by developing closer liaisons interprofessionally.

MRS. N. W. IRVING, JR., *Chairman*
Community Service Committee

Community Health Week

Community Health Week is scheduled for October 18-24. The AMA is again encouraging all state and local medical societies to participate in this event, and invites the cooperation of other interested agencies. Full details on the Community Health Week observance were mailed to all state and county medical societies on or about July 15.

AMA-ERF Christmas Card Plan For County Auxiliaries

The Woman's Auxiliary to the Iowa Medical Society will participate in the AMA-ERF Christmas Card plan this year. It is hoped that county Auxiliaries will utilize this means of increasing their donations to the American Medical Association Education and Research Foundation.

Briefly, the plan works like this: Sample books containing a collection of personalized Christmas cards will be available for county Auxiliary use. About 150 designs are presented, ranging in price from $13.50 to about $60.00 per 100 cards, including the printing of sentiments and personal names. They may be ordered in lots of 25 cards up to any desired amount, and each order includes enclosure cards stating that AMA-ERF benefits from your Christmas card. On each order sold, the county Auxiliary will receive 40 per cent to send as a contribution to AMA-ERF.

The cards can be sold to anyone, and the Auxiliary representative is responsible only for taking the order. The cards are sent to the buyer on a charge basis, and the company handling the project will do the shipping and invoicing.

Information about the project has been sent to each county Auxiliary. Members-at-large who are interested in cards for their own use or for resale can receive details by writing to the State AMA-ERF Auxiliary chairman, Mrs. R. L. Wicks, 204 South Story Street, Boone, Iowa 50036.

In Memoriam

Mrs. G. J. McMillan (Mary), the immediate past president of the Woman's Auxiliary to the Iowa Medical Society and wife of Dr. McMillan of Fort Madison, died of cancer August 12 at a hospital in Burlington.

Mrs. McMillan was born in New York. She graduated from Metropolitan Hospital School of Nursing, New York City, and attended Columbia University, New York City. She served as an Army nurse during World War II, assigned to the 95th Field Hospital, China, Burma, India Theatre.

The McMillans have lived in Fort Madison since 1951, when Dr. McMillan established a private practice of medicine and surgery in that city.

The Auxiliary extends its sincere sympathy to Dr. McMillan.

"Action for Safety"

Have you considered a program on "Safety" for your Auxiliary during the forthcoming year? Statistics on safety have very little meaning, but are very important in adding the Where, When, To what extent, and Under what circumstances. Accidents have an adverse effect on Community Health. Statistics, therefore, present the need for safety measures.

Your program should motivate people to action! Films can be shown, but direction is needed in the discussion of films. Through the Iowa State Department of Health, several films on safety are available for your use. These include ones on fire, water, falls, small children's safety, pedestrian safety, seat belts, and community safety measures. Through the Iowa Medical Society, there is at your disposal a film on poisons and one on auto safety. These films are all available without charge, except that you must pay the return postage.

A film in itself does not provide enough stimuli for action. Showings should be followed by either a speaker or perhaps the findings from a local survey made by a group of your members. Discussion of personal experiences creates motivation for preventive measures. Maybe you need a survey of your community first, so that you can stress the local safety needs. This survey could be on swimming (teaching programs offered, swimming in unsupervised places, fencing of private pools, use of farm ponds, the possibility of using motel pools as teaching facilities), mechanical appliances (good repair, whether correctly used), driver education (Chrysler is giving a free car to each school district whose schools participate with 30 hours of classroom study plus six hours of experience driving), or perhaps you might start a safety council in your own family just discussing home hazards.

The Emergency Medical Service, known as EMS, is a new program being introduced in the field of Safety. This includes the basic principles involved in first-aid, calling an ambulance, etc. Perhaps your community could use a home gun-

safety program, the material for which is distributed through the National Rifle Association and the Department of Public Health. Or maybe your survey could be made on abandoned refrigerators to see that they have been properly disposed of.

Whatever your project, make your community *Safety* conscious! Be sure that you are doing all you can to prevent accidents!

Another challenge to local Auxiliaries would be to conduct surveys in local high schools to find out whether every "lab" student has adequate eye protection—to see that the schools are equipped with industrial-type, accident-proof protective glasses. Athletes who must wear glasses should be protected with shatterproof lenses. Only three states now have state laws requiring every lab and industrial shop student to wear industrial safety glasses and requiring all teachers and visitors to wear them. As program material you may obtain the film "The Smartest Boy in Town" from the Society for Prevention of Blindness. This film portrays the high cost in possible blindness paid by an unusually bright chemistry student and outstanding athlete because he had no protection for his eyes.

It is time to stop talking softly and start to act! With farmers creating recreational areas on their land, Water Safety must be stressed in your community. This could be done through the organization of more swimming clubs, through making swimming lessons available to all children in the community, and through urging the use of life jackets at all times in boating and water-skiing. Red Cross offers first-aid classes in which mouth-to-mouth resuscitation is learned through the aid of Resusi Annie. But farm ponds are also the probable source of infections and disease from water pollution. Through research, it has been determined that many tractor accidents in rural areas occur in broad daylight on straight stretches of road, and that many of them involve farmers running into farmers. A new safety emblem for farm vehicles is being developed.

Make use of all possible groups in the community to help develop your program: youth groups, service clubs, P.T.A.'s, women's clubs, county agents, rural organizations, etc.

The Poison Information Center in Des Moines indexes all poisons, with their ingredients, and has a cross-index of ingredients and their antidotes. A physician is on call 24 hours a day seven days a week. Twenty-five treatment centers are located in various cities throughout Iowa. Twenty-five per cent of the children brought into these centers have taken aspirin. As a pill-taking nation, we should stop and ask ourselves: "Is it really necessary to purchase in large amounts just because for an additional cent another 100 pills are available?" Disposable syringes must be disposed of properly. Urge people to keep their pills in the container in which they arrived. Also cleaning materials should not be transferred from their original containers. If you have a startling new way to keep curiosity from prompting children to swallow pills, let the Information Center know.

Is fire protection in your home worthwhile? More lives have been lost in fires than in all the wars since we gained our Independence! One million dollars a month is lost in Iowa by fire! One life is thus lost every 25 minutes in the U. S.! Why not try "Operation Edith (Exit Drills In The Home)"? Start out with a family conference and teach the children how to report a fire, including dialing in the dark; check your stairway exits; teach them to feel a door to see if it is warm before opening; teach them that they must open doors carefully because of pressures on the outside; make plans for exit from a two-story home, showing the children how to open the storms and screens, or how to proceed if windows are small and high in the rooms where they could get out; or if the windows are burglar-proof, how they can be opened from inside. Be sure large furniture can be easily moved from windows, and have a gathering place for a headcount after a fire.

You are never too old to be shocked! Electric shocks result from inadequate knowledge and from carelessness. Electricity can neither be seen nor heard, nor can you smell electricity, but the end result can be seen! Few people realize the electrical hazards existing along our streets and highways. Low voltage is as dangerous as high voltage. Current determines the severity of electrical shock. The slightest shock should be a warning. People do not die from electrical shock but from electrocution. Electric shock produces stoppage of breathing and stoppage of the heart, but artificial respiration will revive such victims. The Iowa Association of Electric Cooperatives has a film entitled "My Pop's a Lineman," which demonstrates the hazards of flying kites, the cutting of trees near power lines, what to do if a car is involved in an accident with electrical wires, and how insulators provide protection. Ask your local power supplier, your electric cooperative, or any of the six major electric companies in Iowa for program material.

We need ACTION FOR SAFETY!!

Dinner speaker at the 16th Annual Community Health Education Workshop at Ames was Dr. Herbert C. Merillat, a Des Moines psychiatrist.

Speaking on the "Psychological Aspects of Accidents," he said that the acceptance of psychology as a science and the development of psychosomatic medicine have led to the clinical approach in the analysis of accident causation. Eighty per cent of all accidents, motor vehicle and otherwise, are based on human factors. Even in cases involving mechanical failures, the human factor can often determine the extent of the injury to the individual and involvement of others. The aim of the clinical approach to accidents is to understand both the healthy and the unhealthy emotional patterns, how they operate, in whom and when.

In a study of industrial injuries, it was found

that those with the highest accident rate had poor work-attendance records, reacted slowly to supervision, showed a high number of errors in their work, and were hurried, inattentive, and subject to worry and mental tensions. In the same study, a predictable pattern of behavior preceding an accident was found. Highly skilled workers suddenly did things a novice would not do; infractions of safety rules occurred; needless risks were taken. Often the worker showed signs of depression, and frequently was found to have predicted impending doom.

Innumerable factors go into making-up a driver's attitude when he sits behind the wheel. In a study of problem drivers, it was found that the rearing a person has received has an indelible effect upon his personality, including the way he drives a car. Direct connections were noted between his driving habits and his family's respect for the law, and his family's driving habits, drinking habits, and general attitude towards safety, courtesy and caution. It was found that persons who had received extremely strict and uncompromising treatment in their growing-up years, no less than those who had experienced the exact opposite—overly permissive neglect—account for a large percentage of problem drivers.

Accident-proneness can be found in any occupation. It may last for only a few days, as for example when an individual is having acute physical, personal or emotional problems, or it may be fairly constant with individuals who have strong emotional problems.

The individual, not the accident, is the point of departure in studying the cause of mishaps.

"Johnny Coats"

There is a great need for "Johnny Coats" made from old shirts. With minor alterations, men's worn shirts can be used as patients' hospital gowns, and are in demand for shipment overseas. To make a "Johnny Coat," cut off the buttons, collar and cuffs from a worn shirt. Hem the raw edges, sew bias tape "ties" at the neck and mid-way down the shirt opening. Completed "Johnny Coats" should be sent to:

World Medical Relief, Inc.
479 W. Columbia Street, Detroit 1, Michigan
or
Direct Relief Foundation
27 E. Canon Perdido Street,
Santa Barbara, California

As an Auxiliary project, members could collect worn shirts and devote an Auxiliary meeting or special day to the making of "Johnny Coats."

MRS. F. P. RALSTON, *Chairman*
International Health Activities

Fall Board Meeting

The fall meeting of the Board of Directors, consisting of officers, chairmen of standing committees, and county Auxiliary presidents, will be held at the IMS office, in Des Moines, October 27, 1964, at 9:30 a.m. Notices of the meeting will be sent in ample time so that you may return your reservations.

One Last Letter, Please!

The last chance for passage of the King-Anderson Bill may occur at about the time when this issue of the WOMAN'S AUXILIARY NEWS reaches its readers, and doctors' wives should make haste to write a last letter to their Congressmen opposing it.

The Johnson Administration will attempt to attach King-Anderson as an amendment when the bill to increase OASI cash benefits comes up for consideration in the Senate. As this is written, it will have three hurdles to surmount. If the Senate and a Senate-House conference committee approve, the crux will occur shortly afterward, when the House of Representatives is asked to concur in the Senate's action, for the House traditionally is jealous of its privilege of initiating bills involving new or increased taxation.

If anyone can do so, President Johnson is capable of persuading the House to take such a precedent-breaking action.

Since members of Congress, generally, believe that the Social Security tax rate cannot safely be pushed beyond 10 per cent of wages (5 per cent on employee and 5 per cent on employer), and since the currently proposed cash-benefit increase will put the projected total tax at 9.8 per cent, passage of the cash-benefit increase *without* the Senate amendment can be expected to sound the death knell for King-Anderson.

The Auxiliary's Pledge of Loyalty

"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 50312
President-Elect—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104
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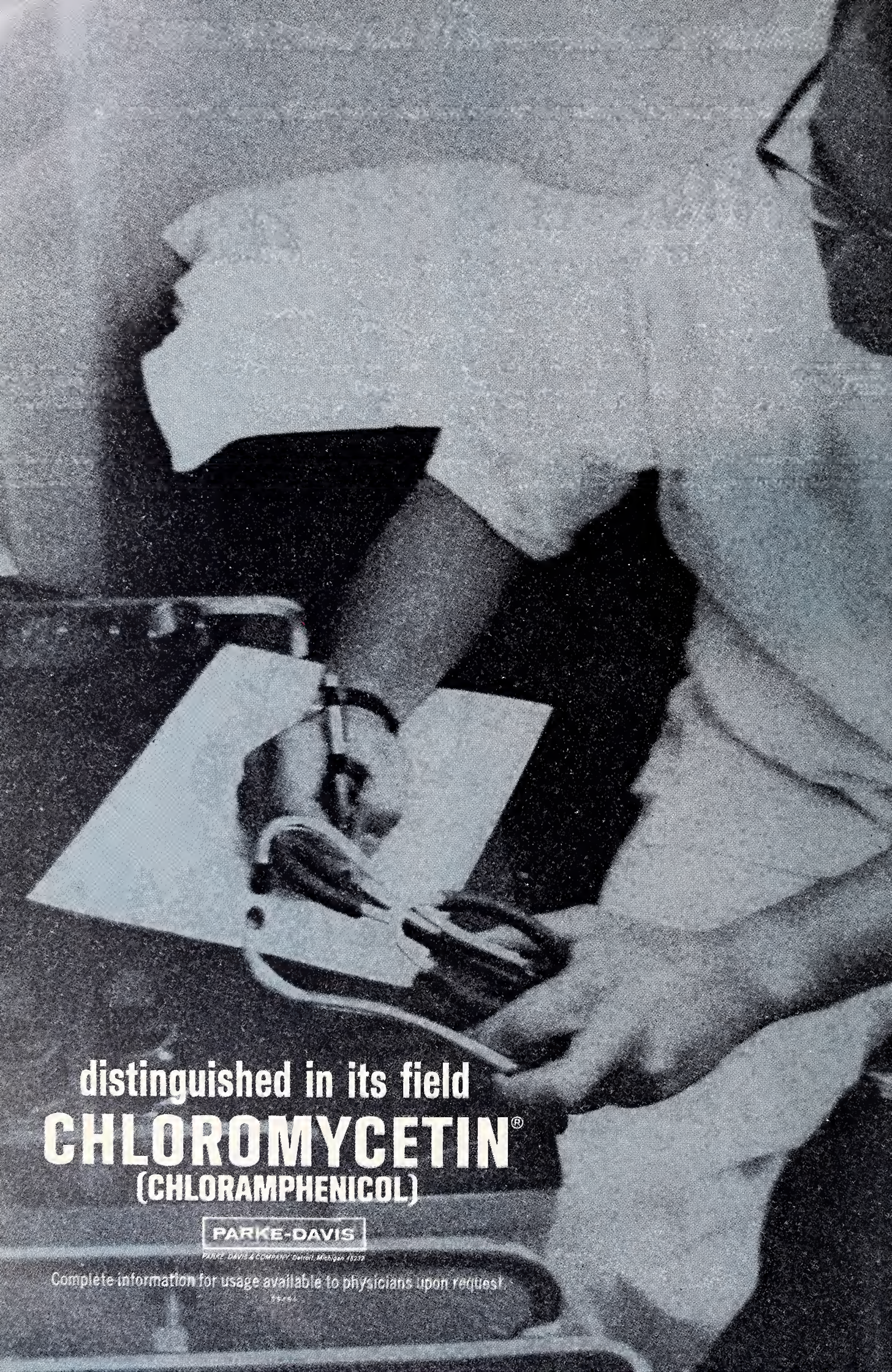
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Smoking Habits and Health in Iowa and Neighboring States

E. CUYLER HAMMOND, Sc.D., and
ARTHUR STOCKS, B.A.
American Cancer Society

THE IOWA DIVISION of the American Cancer Society is cooperating with the 28 other divisions in a prospective epidemiological study aimed at identifying factors related to the occurrence of cancer and other diseases. Smoking is one of many environmental factors included in the investigation, and findings accumulated during the first 34 months of follow-up have recently been published.[1] In this paper, we shall present some of the findings in the Iowa segment of the study.

During the latter part of 1959 and early in 1960, volunteer workers of the Iowa Division of the American Cancer Society enrolled 40,048 men and women, the mean date of enrollment being November 8, 1959. The study area encompasses 23 Iowa counties, mostly rural. Upon enrollment, each subject answered a detailed questionnaire covering factors such as family history, history of disease, physical complaints, education, occupational exposure, height, weight, exercise, diet and various habits. The subjects are traced once a year and are requested to fill out brief questionnaires once every two years. In the most recently completed follow-up, 99.82 per cent of the subjects were traced through September 30, 1962. (The next follow-up was started October 1, 1963, and is still in progress.) When a death is reported, we request the Iowa Health Department to supply us with a copy of the death certificate; and when cancer has been mentioned on the death certificate, we request the doctor to supply additional information.

The Iowa portion of the report is confined to the records of 16,403 men between the ages of 40 and 89 who were traced through September 30, 1962. Of those 16,403 men, 795 (4.8 per cent) were reported to have died; and we now have copies of death certificates on 789 of them. Cancer was mentioned on 149 of the certificates, and doctors have provided additional information on 93 per cent of them.

Dr. Hammond is the director of the national organization's Statistical Research Section, Medical Affairs Department. Mr. Stocks is executive vice president of the Iowa Division, with headquarters at Mason City.

PHYSICAL COMPLAINTS

A list of various physical complaints was printed on the first questionnaire, and the subject was asked to check "yes" or "no" after each of them to indicate whether or not he had the complaint "at present." Those who reported a complaint were asked whether it was "slight," "moderate" or "severe." Of the 16,403 men between the ages of 40 and 89, 4,843 said they were currently smoking 20 or more cigarettes per day, and 3,740 said they had never smoked regularly. Table 1 shows the number and per cent of the smokers who reported having various complaints, and the per cent of non-smokers who reported having the complaints. The percentages of the non-smokers have been adjusted to the age distribution of the cigarette smokers (this being necessary for comparability, since the non-smokers tended to be older than the cigarette smokers).

Cough, shortness of breath, and pain or discomfort in the chest were all reported far more frequently by the cigarette smokers than by the non-smokers, the ratio being 3.51 to 1 for cough; 2.18 to 1 for shortness of breath; and 1.60 to 1 for pain or discomfort in the chest. For only the subjects who reported these complaints in moderate or severe degree, the ratios were 5.54 to 1 for cough; 2.98 to 1 for shortness of breath; and 1.74 to 1 for pain or discomfort in the chest. These findings are consistent with those reported following studies of changes in lung tissue in relation to cigarette smoking.[2, 3] Such studies have shown a high degree of association between cigarette smoking and (1) hyperplasia and the occurrence of cells with atypical nuclei in bronchial epithelium; (2) hyperactive glands in the walls of bronchial tubes; and (3) changes in the lung parenchyma including rupturing of alveolar septums, fibrosis, and thickening of the walls of arterioles and small arteries.

Loss of appetite was reported nearly three times as frequently by cigarette smokers as by non-smokers. One might expect this to be associated with loss of weight; and loss of weight during the

TABLE 1

PHYSICAL COMPLAINTS REPORTED BY 4,843 IOWA MEN WHO SMOKED 20 OR MORE CIGARETTES PER DAY, AND BY 3,740 IOWA MEN WHO HAD NEVER SMOKED REGULARLY

Physical Complaint	Cigarette Smokers With Complaint: No. of Men (a)	Cigarette Smokers With Complaint: Per Cent (b)	Non-Smokers With Complaint (Per Cent) (c)	Ratio (b) ÷ (c) (d)
Cough (slight, moderate, severe)	2,975	61.4	17.5	3.51
Cough (moderate or severe)	1,528	31.6	5.7	5.54
Shortness of breath (slight, moderate or severe)	1,824	37.7	17.3	2.18
Shortness of breath (moderate or severe)	778	16.1	5.4	2.98
Pain or discomfort in chest (slight, moderate or severe)	875	18.1	11.3	1.60
Pain or discomfort in chest (moderate or severe)	285	5.9	3.4	1.74
Loss of appetite	353	7.3	2.6	2.81
Loss of weight	372	7.7	5.2	1.48
Gain of weight	205	4.2	3.0	1.40
Nausea or vomiting	298	6.2	4.2	1.48
Fatigue easily	1,927	39.8	28.7	1.39
Pain in stomach	724	14.9	10.9	1.37
Indigestion	1,271	26.2	19.5	1.34
Hoarseness	589	12.2	9.3	1.31
Diarrhea	304	6.3	4.9	1.29

preceding two years was reported somewhat more frequently by cigarette smokers than by non-smokers. However gain of weight may occur somewhat more frequently in cigarette smokers than in non-smokers. This suggests that fluctuations in weight may occur somewhat more frequently in cigarette smokers than in non-smokers.

A number of other physical complaints such as hoarseness, nausea or vomiting, pain in the stomach, indigestion, diarrhea, and a tendency to "fatigue easily" were also reported somewhat more frequently by cigarette smokers than by non-smokers. The picture in general indicates that cigarette smokers, as a group, tend to feel less physically fit than do non-smokers.

HOSPITALIZATION

At the time of the second follow-up (approximately two years after the start of the study), surviving subjects were requested to fill out a second questionnaire. On it, they were asked whether or not they had been hospitalized since October 1, 1959, the date when the study was started. Of course the non-survivors did not fill out that second questionnaire, but we assumed that all those who had died had been hospitalized prior to death, this being true in the great majority of cases.

In Table 2, Iowa men aged 40 to 69 are classified in groups by their smoking habits as reported on the first questionnaire; and the percentage hospitalized is shown for each of these groups. For comparability, the percentages have been stan-

TABLE 2

PER CENT OF MEN HOSPITALIZED BETWEEN START OF STUDY AND SECOND FOLLOW-UP (APPROXIMATELY TWO YEARS)

(Iowa men were aged 40-69 at start of study. Percentages are standardized for age on the total population of enrollees in the state.)

Smoking Habits	Per Cent Hospitalized
Never Smoked Regularly	14.4
Cigar, Pipe (no cigarettes)	15.9
Cigarette and other	17.6
Cigarette only	19.5
Current Cigarette*	19.6
1-9 a day	17.3
10-19 a day	17.8
20-39 a day	20.0
40+ a day	24.4
Inhale not at all or only slightly	16.5
Inhale moderately	20.0
Inhale deeply	21.1
Age at Start of Smoking:	
25 or older	15.2
20-24	19.4
15-19	20.1
Before age 15	21.1

* Men with histories of only cigarette smoking who were smoking cigarettes at the time of enrollment.

TABLE 3

MORTALITY BY TYPE OF SMOKING (LIFETIME HISTORY)
IOWA, MINNESOTA, MISSOURI AND ILLINOIS

Type of Smoking (Lifetime History)	Age 40-69				Age 70-89			
	No. of Men	Number of Deaths Observed	Expected	Mortality Ratio	No. of Men	Number of Deaths Observed	Expected	Mortality Ratio
Never Smoked Regularly	23,186	615	615.0	1.00	3,931	621	621.0	1.00
Pipe, Cigar Only	9,341	286	297.1	0.96	2,767	442	446.7	0.99
Cigarette and Other	21,902	820	547.9	1.50	1,891	331	263.5	1.26
Cigarette Only	45,244	1,735	936.4	1.85	1,879	342	257.5	1.33
Total	99,673	3,456	2,396.4	1.44	10,468	1,736	1,588.7	1.09

dardized for age on the basis of the age distribution of all the men in the study.

Only 14.4 per cent of the men who had never smoked were hospitalized within two years of the start of the study, whereas 19.5 per cent of the men with histories of only cigarette smoking had been hospitalized during the same period of time. Among current cigarette smokers, the risk of hospitalization increased with the amount of smoking, from 17.3 per cent for those who smoked from one to nine cigarettes per day, to 24.4 per cent for those who smoked 40 or more cigarettes per day. The percentage of men hospitalized was greater among cigarette smokers who said they inhaled deeply than among those who said that they did not inhale or that they inhaled only slightly; and it was greater among men who had started to smoke cigarettes early in life than among those who had started to smoke later in life.

MORTALITY

A statistically meaningful analysis of death rates in relation to smoking habits requires a large number of subjects. Therefore, we combined the Iowa segment of the study with the segments from those of neighboring states, Minnesota, Missouri and Illinois. In these four states, we enrolled and traced a total of 110,141 men in age group 40-89. Of that number, 5,192 died between the start of the study and September 30, 1962.

Table 3 shows the men classified by type of smoking (lifetime history). The figures under the heading "observed" are the actual numbers of deaths reported from the start of the study through September 30, 1962. Figures under the heading "expected" are the numbers of deaths that would have occurred if the age-specific death rates in each group had been the same as the age-specific death rates of men who had never smoked regularly. In other words, the age-specific death rate of the non-smokers is taken as a standard for comparison. The mortality ratio is the observed number of deaths divided by the expected number of deaths. By definition, then, the mortality ratio of the non-smokers is 1.00.

Men with a history of only cigarette smoking had by far the highest death rates (as indicated by their high mortality ratios). In age group 40 to 69, the death rate for such cigarette smokers was 85 per cent higher than the death rate for non-smokers; and in age group 70 to 89, the death rate for such cigarette smokers was 33 per cent higher than the death rate for non-smokers (see Figure 1).

The death rate for men who smoked cigarettes and also smoked pipes or cigars (i.e., the "cigarette

TABLE 4

MORTALITY BY AMOUNT OF CIGARETTE SMOKING, DEGREE OF INHALATION AND AGE AT START OF CIGARETTE SMOKING. AGE GROUP 40 TO 69.

IOWA, MINNESOTA, MISSOURI AND ILLINOIS

Current Cigarette Smoking	Numbers of Men	Numbers of Deaths Observed	Expected	Mortality Ratio
Cigarettes per Day:				
1—9	3,139	114	76.9	1.48
10—19	6,393	260	142.0	1.83
20—39	19,812	739	366.2	2.02
40+	3,936	158	62.5	2.53
Degree of Inhalation:				
None	2,253	89	59.5	1.50
Slight	4,763	210	111.2	1.89
Moderate	18,559	673	347.7	1.94
Deep	7,636	292	127.6	2.29
Age at start of Cigarette Smoking:				
25+	3,180	121	78.8	1.54
20—24	8,285	269	162.0	1.66
15—19	17,338	686	317.0	2.16
Under 15	3,466	143	67.8	2.11
Never Smoked Regularly	23,186	615	615.0	1.00

and other" group) was somewhat lower than the death rate for men who smoked cigarettes only. This is accounted for by the fact that men with mixed smoking habits tend to smoke fewer cigarettes per day and tend to inhale the smoke less deeply than do men who smoke only cigarettes.

The death rate for pipe and cigar smokers was just about the same as the death rate for non-smokers. This appears to be due to the fact that the great majority of pipe and cigar smokers do not inhale the smoke, or inhale it only to a slight degree.

Table 4 shows further details on current cigarette smokers (i.e., men who were smoking cigarettes regularly at the time they enrolled in the study) with histories of only cigarette smoking. It is confined to men between the ages of 40 and 69 for the reason that there were relatively few such cigarette smokers among the men in the older age groups. Figures for non-smokers are included to provide a basis for comparison.

The mortality ratio increased substantially with the number of cigarettes smoked per day, and was substantially higher among cigarette smokers who said they inhaled the smoke deeply than among those who said that they did not inhale the smoke. The cigarette smokers who had taken up the habit before reaching their twentieth birthday had higher death rates than did cigarette smokers who had started the habit later in life.

Death certificates indicated that coronary artery disease accounted for 2,331 (44.9 per cent) of the 5,192 deaths. Deaths from this cause were highly associated with the smoking habits of men in age group 40 to 69, but less highly associated with the smoking habits of men in age group 70 to 89. In age group 40 to 69, the coronary artery disease mortality ratios were 1.00 for men who had never smoked; 1.09 for pipe and cigar smokers; 1.55 for men who smoked cigarettes and also smoked pipes or cigars; and 1.88 for men who smoked only cigarettes. The corresponding mortality ratios for men in age group 70 to 89 were 1.00, 0.94, 1.28, 1.28, and 1.20, respectively. Among cigarette smokers, the death rate from coronary artery disease was related to the degree of inhalation. For example,

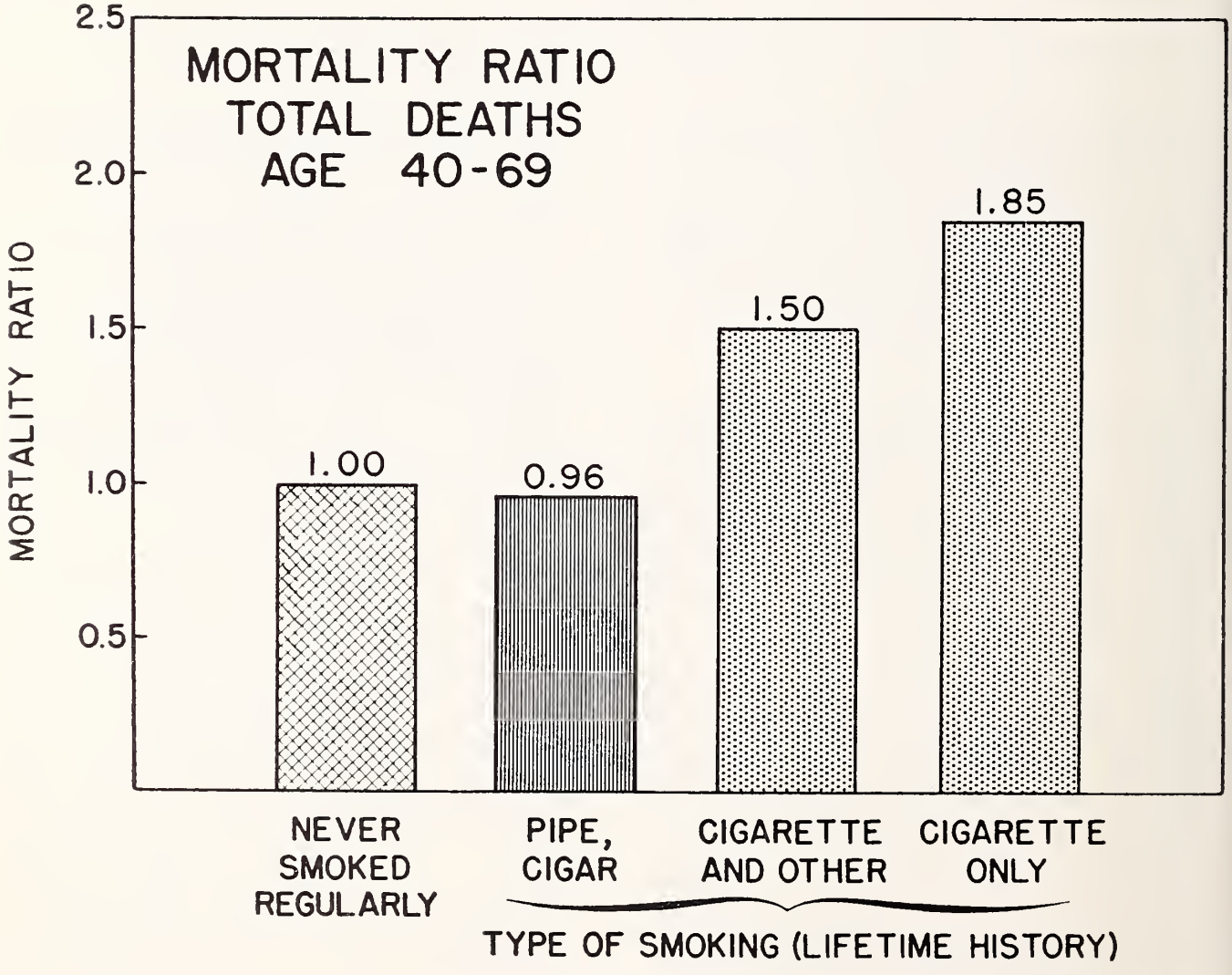


Figure 1

among cigarette smokers in age group 40 to 69, the mortality ratio was 1.49 for those who said that they did not inhale the smoke, and 2.29 for those who said that they inhaled deeply.

Lung cancer accounted for the deaths of 204 men (177 in age group 40 to 69, and 27 in age group 70 to 89). All but seven of these men had been smokers. Nine had smoked only pipes or cigars, and 188 had had histories of regular cigarette smoking. The lung-cancer death rate was 10 times as high among men with histories of cigarette smoking as among men who had never smoked; and the lung-cancer death rates of cigarette smokers increased greatly with the amount of smoking.

Previous studies have shown a relationship between smoking habits and death rates from cancer of the buccal cavity, pharynx, larynx, esophagus and bladder. Cancer of these sites accounted for 86 deaths. All but nine of these men had been smokers (17 had smoked only pipes or cigars; 22 had smoked cigarettes and pipes or cigars; and 38 had smoked only cigarettes).

Emphysema had been responsible for 75 deaths. Three of these men had never smoked regularly, four had smoked only pipes or cigars, and 68 had histories of cigarette smoking.

CONCLUSIONS

The findings in the studies in Iowa, Minnesota, Missouri and Illinois are in good agreement with previous prospective epidemiologic studies on smoking in relation to health.[4-9] The epidemiologic data, together with evidence from clinical, histologic and experimental studies, indicate that cigarette smoking is a serious hazard to health.[10-12]

ACKNOWLEDGEMENTS

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12. U. S. Department of Health, Education and Welfare: Smoking and health; report of the Advisory Committee to the Surgeon General of the Public Health Service. Washington, D. C. Public Health Service Publication No. 1103, 1963.

Postgraduate Course in Urology

The Department of Urology at the S.U.I. College of Medicine, in cooperation with the Iowa Urological Society and the Iowa Division of the American Cancer Society, will present the following program in Iowa City on November 6-7, 1964. It has been approved for 9½ hours of credit by the American Academy of General Practice, and the registration fee for physicians other than members of the Iowa Urological Society will be $15. Urologists will pay $5.

Friday, November 6

8:00 a.m. REGISTRATION AND OPERATIVE SURGERY—Sixth Floor Operating Room, University Hospitals

12:30 p.m. LUNCH
Room E-331, Medical Amphitheater

1:45 p.m. "The Management of Cancer of the Urinary Bladder"—Ian M. Thompson, professor of urology, University of Missouri

2:15 p.m. QUESTION AND ANSWER PERIOD—Bladder Cancer

2:30 p.m. "The Management of Inoperable Prostatic Cancer"—John T. Grayhack, M.D., professor of urology, Northwestern University

3:00 p.m. QUESTION AND ANSWER PERIOD—Prostatic Cancer

3:30 p.m. PYELOGRAM AND CASE DISCUSSION PERIOD
(Bring your problem cases to submit to the panel of experts.)

4:45 p.m. BUSINESS MEETING—Iowa Urological Society

Saturday, November 7

9:00 a.m. PROBLEMS IN THE DIAGNOSIS AND MANAGEMENT OF ABDOMINAL MASSES

10:15 a.m. PROBLEMS IN THE MANAGEMENT OF URINARY-TRACT INFECTIONS

Coming Meetings

IN STATE

Oct. 2 — **Otolaryngology for the General Practitioner,** State University of Iowa College of Medicine, Iowa City.

Oct. 15 — **Fourth Annual Northeast Iowa Clinical Conference,** Masonic Temple, Waterloo.

Oct. 15-16 — **The Surgery of Trauma,** State University of Iowa College of Medicine, Iowa City.

Oct. 29-31 — **Arthritis Conference,** State University of Iowa College of Medicine, Iowa City.

Oct. 29-31 — **Orthopedic Conference,** State University of Iowa College of Medicine, Iowa City.

Nov. 4-5 — **Nursing Institute on Prenatal and Perinatal Problems,** State University College of Medicine, Iowa City.

Nov. 6-7 — **Urology,** State University of Iowa College of Medicine, Iowa City.

Nov. 12 — **Diet Therapy,** State University of Iowa College of Medicine, Iowa City.

CONTINENTAL U. S.

Oct. 1-3 — **Colon,** University of Nebraska College of Medicine, Omaha.

Oct. 2-3 — **School Health,** University of Kansas School of Medicine, Kansas City, Kansas.

Oct. 3 — **American College of Physicians Regional Meeting for Internists in Washington, D. C., and Maryland,** Clinical Center, National Institutes of Health, Bethesda, Maryland.

Oct. 3-9 — **Annual Otolaryngologic Assembly,** Medical Center, University of Illinois College of Medicine, Chicago.

Oct. 5-7 — **Basic Mechanisms in Internal Medicine,** University of Southern California School of Medicine, Los Angeles.

Oct. 5-7 — **Fractures,** University of Colorado School of Medicine, Denver.

Oct. 5-8 — **Instrument Symposium and Research Equipment Exhibit,** National Institutes of Health, Bethesda, Maryland.

Oct. 5-9 — **Sixteenth Postgraduate Assembly of the Endocrine Society,** Mayo Clinic, Rochester.

Oct. 5-9 — **American College of Surgeons Clinical Congress,** Chicago.

Oct. 7-8 — **Alcoholism, Habituation, and Addiction,** University of Missouri Medical Center, Columbia.

Oct. 8-9 — **Sixteenth Annual Conference on the Kidney,** New York Academy of Medicine, New York City.

Oct. 8-10 — **American College of Physicians,** Hotel Biltmore, Los Angeles.

Oct. 10-14 — **American Society of Anesthesiologists,** Americana Hotel, Bal Harbour, Florida.

Oct. 12-13 — **Cardiorenal Mechanisms and Diseases,** Marriott Motor Hotel, Philadelphia.

Oct. 12-15 — **Occupational Skin Problems,** University of Cincinnati, The Institute of Industrial Health, Cincinnati.

Oct. 12-16 — **The Physiological Basis of Internal Medicine,** Duke University Medical Center, Durham.

Oct. 13-16 — **Pennsylvania Medical Society,** Bellevue-Stratford Hotel, Philadelphia.

Oct. 13-18 — **American Association of Medical Assistants,** Sheraton-Oklahoma Hotel, Oklahoma City.

Oct. 15-22 — **Third Annual Conference on Research in Medical Education,** Denver.

Oct. 16-17 — **American College of Physicians Regional Meeting for Internists in Southeastern U. S.,** Fort Sumter Hotel, Charleston, South Carolina.

Oct. 17 — **American College of Physicians Regional Meeting for Missouri Internists,** Chase-Plaza Hotel, St. Louis, Missouri.

Oct. 19-23 — **The Medicine of Tomorrow, Recent Advances of Immediate Clinical Interest in Molecular Biology and Other Basic Sciences,** University of Wisconsin Medical Center, Madison.

Oct. 22-24 — **Chiefs of Staff Conference,** University of Colorado School of Medicine, Denver.

Oct. 22-24 — **Course in Postgraduate Gastroenterology,** The Roosevelt, New York City.

Oct. 22-24 — **Modern Concepts of Nutrition and Heart Disease,** Mound Park Hospital, St. Petersburg.

Oct. 25 — **American College of Nutrition,** Americana Hotel, New York.

Oct. 26-29 — **Omaha Mid-West Clinical Society,** Civic Auditorium, Omaha.

Oct. 26-30 — **Clinical Cardiopulmonary Physiology,** Continental Hotel, Chicago.

Oct. 29-31 — **First National Congress on Strokes,** Palmer House, Chicago.

Oct. 29-31 — **Seventeenth Annual Meeting Gerontological Society,** Leamington Hotel, Minneapolis.

Oct. 30 — **Symposium II—Blood Volume in Clinical Medicine,** International Hotel, Los Angeles.

Oct. 30-31 — **First National Conference on Health Education Goals,** Sheraton-Chicago, Chicago.

Nov. 4-5 — **A. Morris Ginsberg Memorial Seminar: Hematology,** Menorah Medical Center, Kansas City, Missouri.

Nov. 7-8 — **National Conference on Disaster Medical Care,** La Salle Hotel, Chicago.

Nov. 9-11 — **Three Days of Cardiology,** Marriott Motor Hotel, Philadelphia.

Nov. 9-12 — **Internal Medicine,** University of Kansas School of Medicine, Kansas City, Kansas.

Nov. 9-12 — **Interstate Postgraduate Medical Association of North America,** Pittsburgh Hilton Hotel, Pittsburgh.

Nov. 9-13 — **Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs,** International Inn, Washington, D. C.

Nov. 9-21 — **Course in Laryngology and Bronchoesophagology,** Illinois Eye and Ear Infirmary, Chicago.

Nov. 11-12 — **Medical and Surgical Aspects of Trauma,** Coffey Memorial Auditorium, Milwaukee.

Nov. 11-14 — **American Academy of Neurological Surgery,** Key Biscayne Hotel, Miami.

Nov. 14 — **Wisconsin Society of Pathologists,** Marquette University School of Medicine, Milwaukee.

Nov. 16-19 — **Section on Otolaryngology of the Southern Medical Association,** Memphis.

Nov. 16-20 — **Fundamental Concepts of Gastroenterology,** University of Michigan Medical Center, Ann Arbor.

Nov. 16-20 — **Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs,** Barbizon Plaza Hotel, New York City.

Nov. 18-21 — **Congress of Neurological Surgeons (14th),** Bal Harbour, Florida.

Nov. 19-20 — **Congenital Malformations,** University of Nebraska College of Medicine, Omaha.

Nov. 20-21 — **American Psychiatric Association,** Bellevue-Stratford Hotel, Philadelphia.

Nov. 20-21 — **M.D. Day,** University of Missouri Medical Center, Columbia.

Nov. 28-29 — **American College of Chest Physicians (interim meeting),** Fontainebleau Hotel, Miami Beach.

Nov. 28-29 — **First National Conference on Areawide Health Facilities Planning,** Americana Hotel, Bal Harbour, Florida.

Nov. 29 — **National Conference on Medical Aspects of Sports,** Miami Beach.

Nov. 29-Dec. 2 — **American Medical Association (clinical meeting),** Auditorium and Exposition Hall, Miami Beach and Americana Hotel, Bal Harbour.

Nov. 29-Dec. 4 — **Radiological Society of North America,** Palmer House, Chicago.

ABROAD

Oct. 11-15 — **International Congress on Diseases of the Chest** (Eighth), Mexico City. Exec. Dir. Murray Kornfeld, 112 E. Chestnut St., Chicago.

Scientific Articles

The Pathogenesis of Peptic Ulcer and Its Surgical Implications

EDWARD R. WOODWARD, M.D.
Gainesville, Florida

One of the first people to conjecture about the occurrence of peptic ulcer was John Hunter, a great dissector who saw many ulcers in patients. He couldn't understand why, under normal conditions, the human digestive tube will digest anything that has been ingested, and yet normally it doesn't digest its own wall, which of course consists of the same protein materials as those we so frequently eat. In Hunter's time, the so-called vitalist theory was extant, and those who subscribed to it thought that there was some magic property in the living character of tissues which resisted the digestive process. This vitalist theory carried over into many other areas of medicine, but it was thoroughly exploded, as far as peptic ulcer was concerned, by a classic experiment of Claude Bernard's. Bernard had worked with the German physiologist Heidenhain, and had learned to make his isolated stomach pouches so as to collect pure gastric juice from dogs. When he collected this juice from the dogs and immersed living frog legs in it, the skin digested away, then the muscle was dissolved, and finally—as demonstrated in the middle frog shown in Figure 1—the femoral vessels completely digested in half. This took a period of from 60 to 90 minutes. Thus Claude Bernard competely refuted the vitalist theory, and found instead that gastric juice, in its pure state, was able to digest living tissue. This was the beginning of our modern understanding, as far as it goes, of peptic ulcer problems.

The simple chemical factors sometimes are lost in the shuffle when we consider the clinical complexities of peptic ulcer. When we are dealing with the hydrochloric acid which we consider highly important in ulcer, it is necessary for us to remember that it has only a permissive function. The acid in itself does nothing except to provide the optimal pH for the proteolytic activity of the enzyme pepsin. In measuring the acidity of gastric juice, it is noted that between free-acid 10 and free-acid 130, pepsin is fully active. A free-acid of zero is equivalent to a pH of 3.5. Thus, as long as the pH is higher than 3.5, pepsin is inactive, peptic digestion will not occur, and, as a corollary to that, peptic ulcer will not occur. This is why the old dictum, "No acid; no ulcer" is valid. It is not that the acid causes the ulcer; the acid simply provides the optimal pH for the enzymatic activity.

The next theory to come along had to do with how pure gastric juice can be present in the stomach, since there are so many other things present in the stomach—swallowed saliva, swallowed food, swallowed drink, regurgitated duodenal fluid, mucus secretion, etc. The idea occurred to someone that if there were an *overproduction* of acid gastric juice, these extraneous factors might be overcome and a peptic ulcer would occur. The classic demonstration of the validity of the hypersecretion doctrine of peptic ulcer formation was performed by Wangensteen and co-workers at the University of Minnesota, in about 1940. They incorporated histamine in beeswax and mineral oil; and when they injected this

Dr. Woodward, from the Department of Surgery, University of Florida College of Medicine, made this presentation in Iowa City, on December 4, 1963.

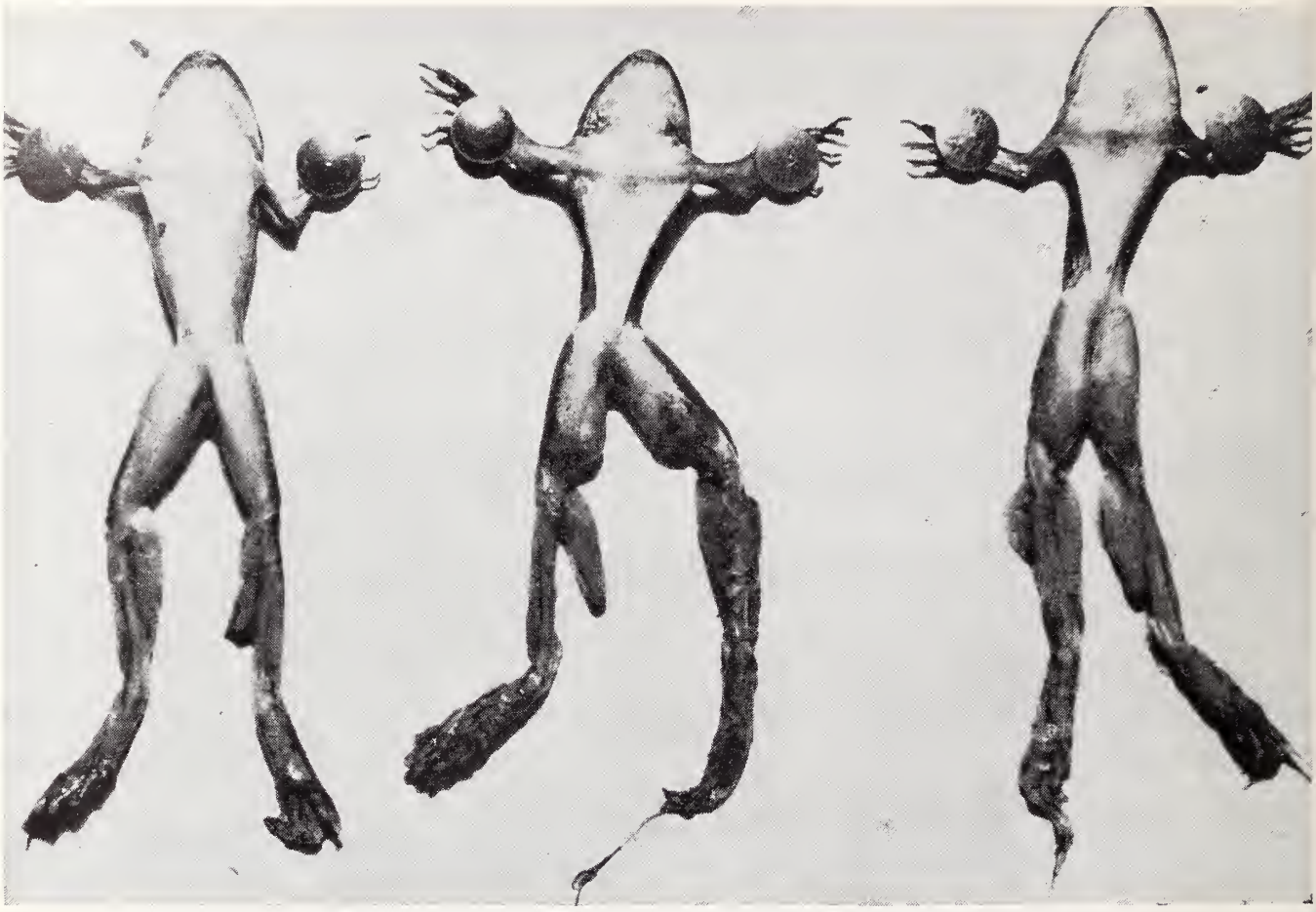


Figure 1. Legs of living frogs digested by pure dog gastric juice.

into dogs, a tremendous hypersecretion of acid gastric juice resulted, and it continued throughout a 24-hour period. When this procedure was repeated daily, the dogs developed typical, chronic, punched-out peptic ulcers in the stomach and duodenum, within 25 to 45 days. That, then, was the first demonstration that hypersecretion or overproduction of gastric juice can overwhelm the normal mechanisms which neutralize and buffer this material.

Figure 2 is a line drawing of a dog with the stomach completely isolated and with the vagus nerves preserved. I think this is best referred to as the Dragstedt pouch, since Dr. Dragstedt was the first to use it extensively. He performed this experiment at the University of Chicago, and simultaneously in the same city Ivy was working with the same preparation, except with the vagi divided. There was a tremendous difference between these two preparations. Ivy's dogs secreted almost nothing, and Dr. Dragstedt's dogs secreted enormous volumes of highly acid gastric juice.

It is not surprising that Dr. Dragstedt's dogs developed ulcers. If these dogs lived as long as 30 days, about 80 per cent of them had typical chronic peptic ulcers in the isolated stomach. Dr. Ivy's dogs with the vagi cut, on the other hand, did not develop ulcers.

Figure 3 demonstrates the secretion from a

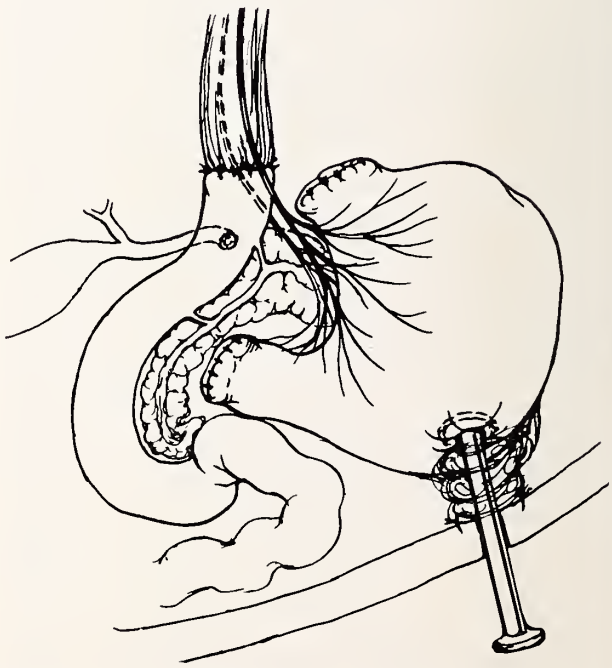


Figure 2. The Dradgstedt pouch dog—stomach totally isolated, with vagus nerves preserved.

Dragstedt pouch with the vagi intact; each black bar is the equivalent of one 24-hour period. It is noted that this dog secreted from 70 to 120 mEq. of acid per day, and when the vagi were cut, there was a dramatic reduction. Thus, this is a neurogenic hypersecretion in the dog with the stomach completely isolated. We still do not have a complete understanding of why this occurs. You will note also that when the vagi have been cut, pepsin secretion is markedly reduced, and this is characteristic. Pepsin is under cholinergic influence almost solely, so that whereas there are many stimuli for acid secretion, only cholinergic stimuli will cause pepsin secretion.

We have been discussing dogs, but dogs don't normally get ulcers. What is the situation in the human being? We shall begin the discussion by limiting ourselves solely to the problem of duodenal ulcer, the garden variety of duodenal ulcer that we see daily in the clinic and in the office. In Figure 4, we are studying the fasting gastric secretion, the unstimulated, continuous secretion of the stomach in normal individuals. This graph shows the secretion in a 12-hour overnight period. It is not necessary to use so long a period, or even a nocturnal period. The secretion is continuous throughout the day and night, and can be measured at any time one chooses. You will note that almost all these normal people secreted less than 20 mEq. of hydrochloric acid per 12-hour period. Most of these individuals slept throughout this nighttime period, and there was no apparent exogenous or endogenous stimulus to gastric secretion. In Figure 5, we see the marked contrast which is provided by patients with duodenal ulcer. In these 70 patients, you see that the great majority produced secretions in the upper ranges. Actually, 85 per cent of them secreted over 20 mEq. in the 12-hour period. Statistical averages and variabilities show that in the fasting, empty stomach, without stimulation, the usual duodenal ulcer patient will secrete about four times as much acid as will the normal individual. So we have here a hypersecretion of a magnitude which, in an experimental animal, regularly produces an experimental ulcer.

Now what is the cause of this? Figure 6 pro-

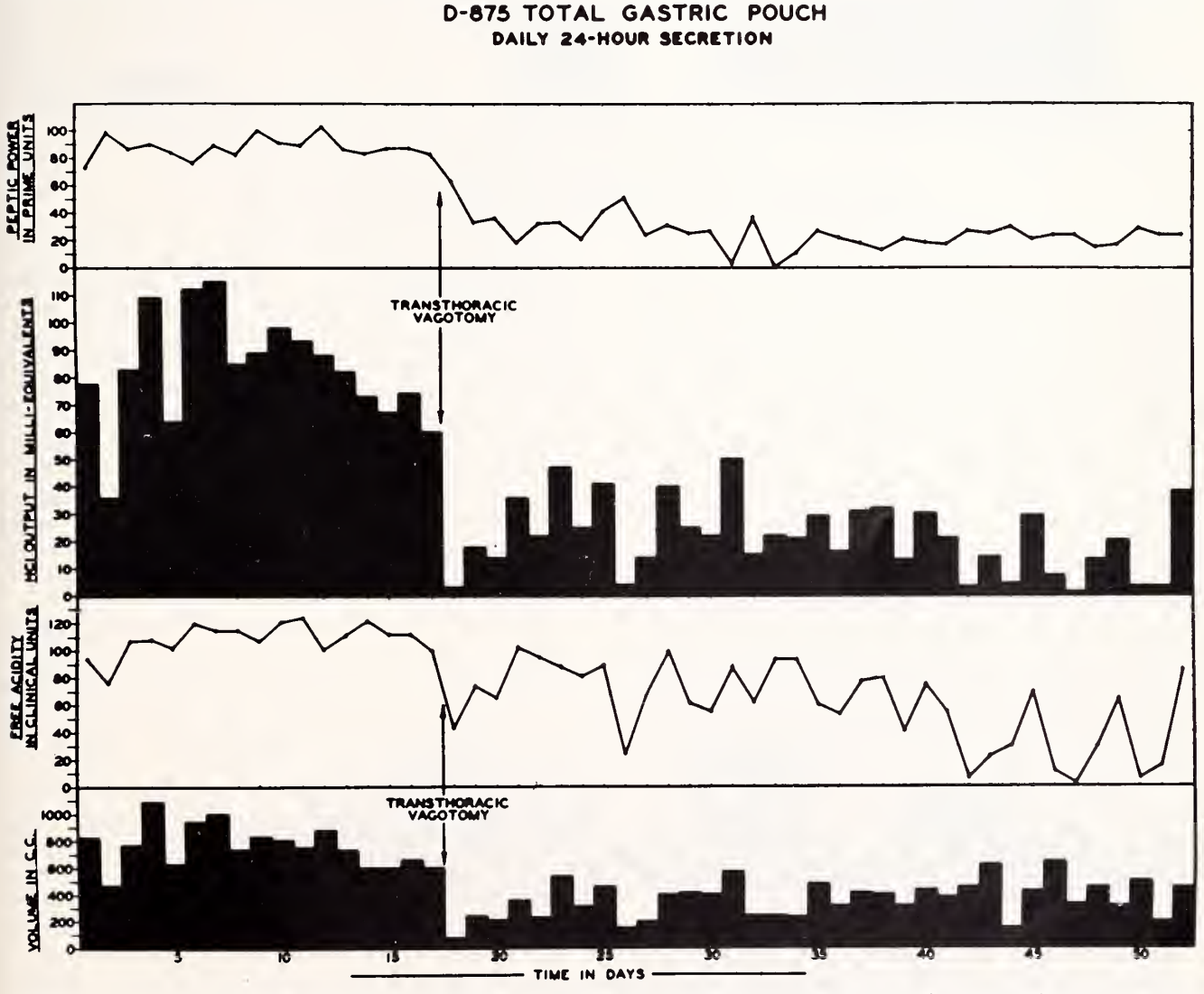


Figure 3. Daily gastric secretion from Dragstedt pouch, showing reduction in both HCl and pepsin following vagotomy.

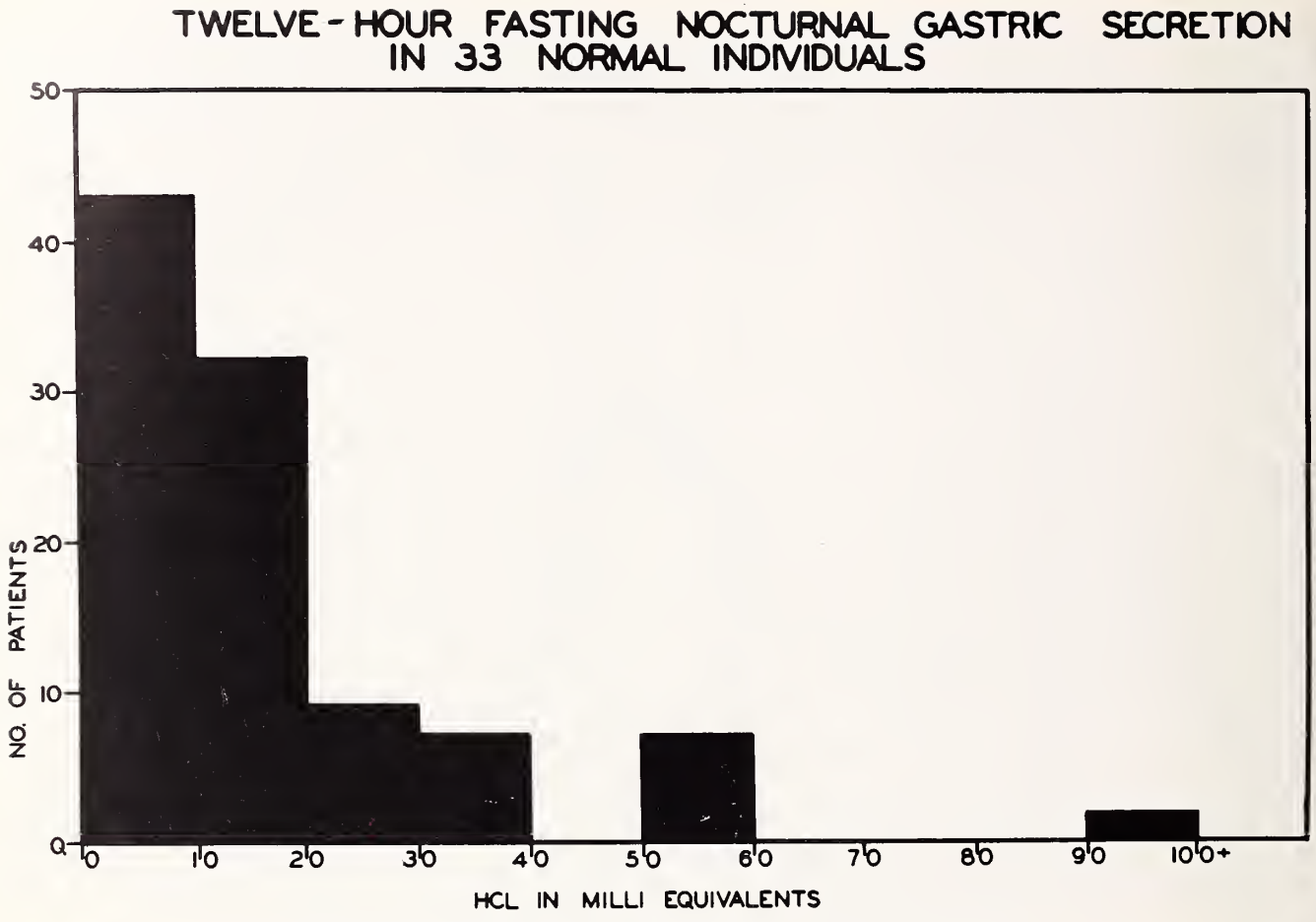


Figure 4. Basal (unstimulated) gastric secretion in normal human subjects.

vides a clue—namely that when the vagi are cut in these patients, the excessive secretion in the fasting state reverts to the normal range. You can see that this graph is practically superimposable on the graph of the normal individuals. Note that patients in whom the vagus section was not complete (cross-hatched areas), secretion tended to remain high. This is certainly an indication that the vagi are somehow involved, and although it doesn't constitute proof that a secretory hypertonus in the vagi is present, it is highly suggestive. However, when we add to this the tremendous amount of ecologic, sociologic and psychiatric information concerning duodenal ulcer, I think we can say with no hesitation whatever that ulcer is not a disease of the stomach or of the duodenum, but that these are merely the end-organs that manifest a disease of the central nervous system. Osler was aware of this fact, of course, when he called duodenal ulcer "the wound stripe of civilization." So in all our treatment we must remember, in humility, that we are not attacking the basic cause; we are attacking the end-organ.

TOTAL VAGOTOMY CORRECTS GASTRIC HYPERSECRETION

Since the first successful total vagotomy in a human being for duodenal ulcer was performed by Dragstedt in 1943, these patients have been followed now for a little over 20 years. Study of these early patients demonstrates that apparently when the vagi are cut they do not regenerate and there is no recrudescence of gastric secretion. For example, in the second patient operated upon, in February, 1943, preoperative overnight 12-hour collections of gastric juice averaged 101 mEq. of hydrochloric acid. Postoperative measurements averaged 29 mEq. per 12 hours. Seven years later, under the same conditions, the patient secreted only 15 mEq. per 12 hours. That patient who had vagotomy alone, has now been asymptomatic for 21 years.

There has been no tendency for fasting gastric hypersecretion to return. In studying 150 patients who had gone over 10 years, we found this to be a regular pattern. If there is a profound reduction in gastric secretion in the postoperative period, it will be permanent in nearly all patients.

The hypersecretion that we have seen in the duodenal ulcer patient is nothing more than an exacerbation of the normal Pavlovian nervous phase of gastric secretion. Whereas this is meant, teleologically speaking, to be an intermittent stimulus to gastric secretion, in the duodenal ulcer patient there is some aberration in the central nervous system that permits it to be continuous.

EXCLUSION GASTRECTOMY HAS THE OPPOSITE RESULT

What about the hormonal influences on the stomach? When the stomach of a dog is opened, the body of the stomach is seen to have a characteristic, beefy red color, with the mucous membrane heaped up in innumerable rugal folds. However, interposed between the body of the stomach and the duodenum is the pyloric antrum of the stomach, with a much heavier muscular wall and with pale, rather flattened mucosa. Although the gross appearance is not nearly so distinctive in the human stomach, there remains a dramatic difference in microscopic appearance. In the body of the human stomach the glands are packed tightly together, with very little stroma, and the glands penetrate all the way to the muscularis mucosae. In the individual glands, characteristic pale-staining parietal cells that produce hydrochloric acid, and the granular chief cells that produce pepsin, are interposed at frequent intervals between mucus-secreting cells. The microscopic anatomy of the mucosa of the pyloric antrum is very different. There are no parietal cells and no chief cells; this part of the stomach secretes no acid and no pepsin. Its only exocrine secretion is mucus. The glands are much fewer and shallower, with a heavy stroma.

It is not too surprising, therefore, to surmise that we have here another example of an organ within an organ, an endocrine function associated with an exocrine function, much as is the case in the pancreas. The mucous membrane of the pyloric antrum produces the hormone gastrin, which mediates the gastric or hormonal phase of gastric secretion. Figure 7 is an indication of the importance of this mechanism in gastric secretory function. This is a dog prepared with an isolated stomach pouch, and you will note that the hydrochloric acid secreted by this pouch averages 60 to 70 mEq. per day. When the pyloric antrum has been resected—this non-acid-secreting part of the stomach—the secretion of acid from the isolated stomach pouch drops to almost nothing. This indicates clearly that the normal stimulus for the major share of its secretory function is coming from the antral hormone. Gastrin has been studied extensively in the past fifteen years and has now been isolated in pure form by Gregory as two closely similar polypeptides.

Following the work on antrum excision in Dragstedt's laboratory, other studies were pursued to investigate the role of pH in the function of the pyloric antrum. Clinical evidence had accumulated to indicate that following the antrum exclusion operation for duodenal ulcer, as popularized by Finsterer, there was a prohibitively high ulcer

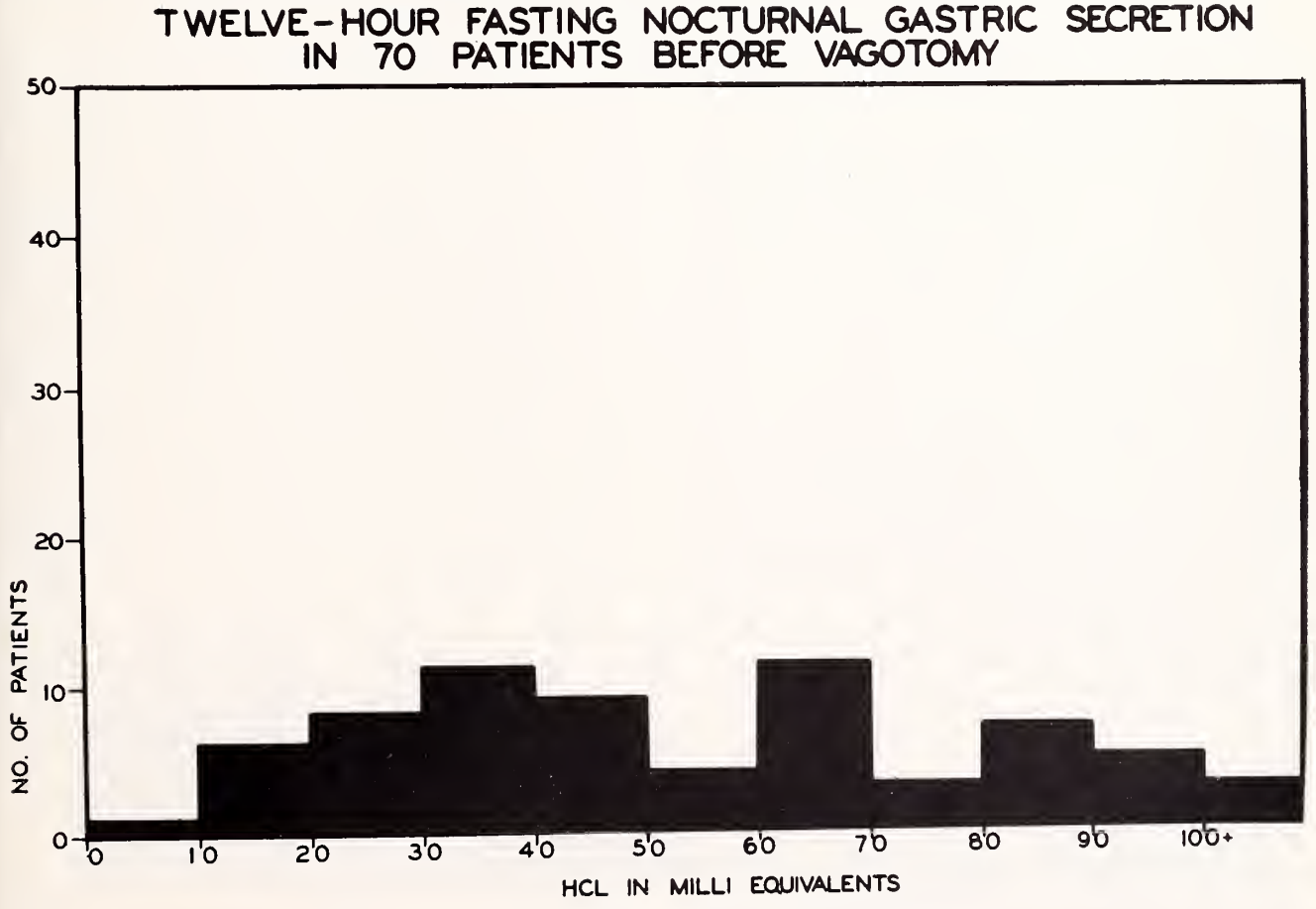


Figure 5. Basal gastric secretion in patients with duodenal ulcer.

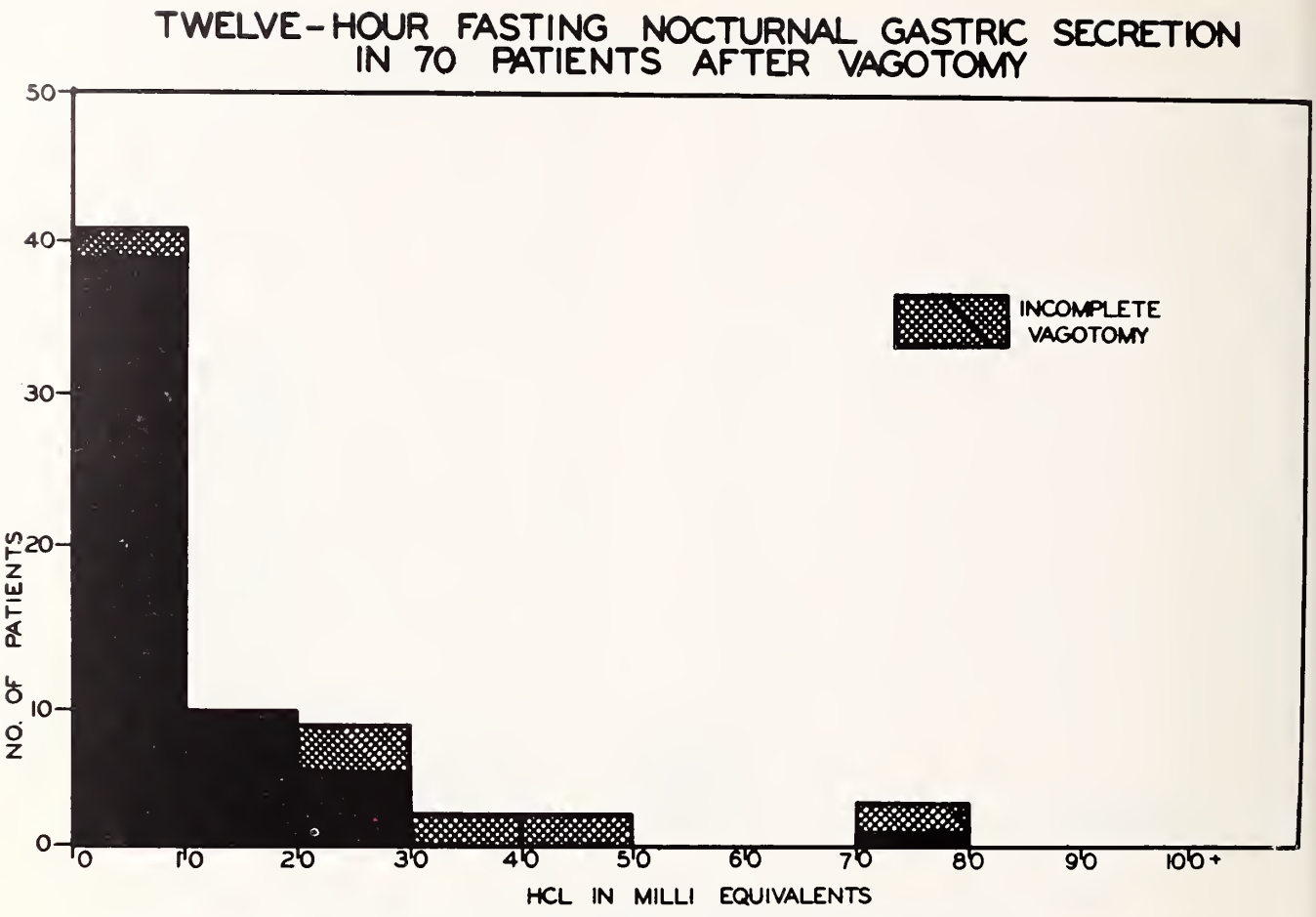


Figure 6. Basal gastric secretion in duodenal ulcer patients following vagotomy.

recurrence rate. The theory of "acid inhibition" was propounded; it was hypothesized that when the acid in the stomach became strong enough, it terminated or inhibited the hormonal function of the antral portion of the stomach. Figure 8 demonstrates this mechanism in the dog. In the isolated stomach pouch seen in the left hand panel, gastric juice is produced at the rate of about 60 mEq. per day. When the antrum is exteriorized to the skin, food which is the normal stimulus to the antrum no longer comes in contact with it. Therefore, less hormone is produced, and the little stomach pouch secretes much less acid. In the third panel, the antrum has been transplanted into the colon, with preservation of its blood supply. The isolated stomach pouch, which has been unchanged during this entire experimental period, now secretes about three times as much acid as it did when the antrum was in its normal location. The clue to this dramatic change in antral function lies in the difference in the pH of its environment. The normal antrum exists immediately distal to the acid-secreting stomach; when the stomach is functioning, the pH progressively drops into the strongly acid range and the hormonal phase of gastric secretion is terminated. In the colon, however, the normal pH approaches neutrality, and there is therefore no shutoff mechanism present. The same food extractives and materials are still present in the fecal current to stimulate the antral hormone, and there is no acid present to terminate it.

The above finding points out a practical lesson to the gastric surgeon, and indicates the reason for failure of the exclusion gastrectomy. It is now an established principle that, if the surgeon does not remove the antrum, it is incumbent upon him to leave it in its normal continuity with the acid-secreting stomach. Need for adherence to this doctrine is readily demonstrated in the dog. The same experiment supports once again the fact that experimentally induced hypersecretion of gastric juice will regularly produce peptic ulcer. In a group of 20 dogs, the antrum was transplanted into the colon, and the body of the stomach was anastomosed to the jejunum in the classical Billroth II method. The resultant overproduction of the hormone gastrin stimulated gastric acid secretion, and typical marginal ulcers in the jejunum opposite the stoma developed in 80 per cent of the animals. Thus, hormonal excess will produce peptic ulcer, as will neurogenic hyperstimulation.

VAGOTOMY AND PYLOROPLASTY ARE THE PROCEDURES OF CHOICE

There are four operative procedures which are being widely used today in the treatment of complicated or intractable duodenal ulcer disease: the classical two-thirds subtotal gastrectomy; vagotomy and gastroenterostomy; vagotomy and pyloro-

plasty; and vagotomy combined with resection of the pyloric antrum, often referred to as hemigastrectomy. All four of these have been used long enough and in large enough numbers of cases, so that we know they are all useful and are reasonably effective in controlling the disease. We shall go through the pros and cons of these various procedures, and it is important for us to recognize that we are dealing in shades of gray rather than in black and white. Although I do not wish to belabor these differences, it is important to recognize the significant role of surgery in the control of duodenal ulcer. This disease has become relatively a much more important public health problem in recent years, since such chronic infectious diseases as tuberculosis no longer strike young men in their twenties in such large numbers. Duodenal ulcer is primarily a disease of young adult males; last year the economic cost of duodenal ulcer in the United States alone was five hundred million dollars. The expenditure just for antacids in this country last year was 80 million dollars. Thus it is clearly seen that this is a disease of no mean proportions, and a large number, probably about 15 per cent, of duodenal ulcer patients eventually come to the attention of the surgeon.

Over the course of the last 21 years, with observations on approximately 4,000 duodenal ulcer patients surgically treated, we have come to the present conclusion that the best procedure for the usual duodenal ulcer patient is vagotomy and pyloroplasty. First, let us discuss the advantages and disadvantages of vagotomy, whether the ancillary drainage procedure is gastroenterostomy or pyloroplasty. There are both technical-surgical and theoretical-physiologic advantages. The major technical advantage is the ability to avoid a diseased area. The mortality and hospital morbidity from surgically treated duodenal ulcer come from the transection of and dissection about the diseased proximal duodenum. Our surgical mortality in the last 800 cases of vagotomy and pyloroplasty was 0.28 per cent. The mortality associated with any procedure in which the duodenum is divided will be in the range of 2 to 3 per cent, or approximately 10 times as high. Associated with this lower mortality is a lower complication rate, so that the hospital stay and the cost to the patient are less.

The primary physiologic advantage is the preservation of the storage function of the stomach. This greatly lessens the chronic morbidity associated with surgery for duodenal ulcer. The dumping syndrome is both less frequent and less severe, and

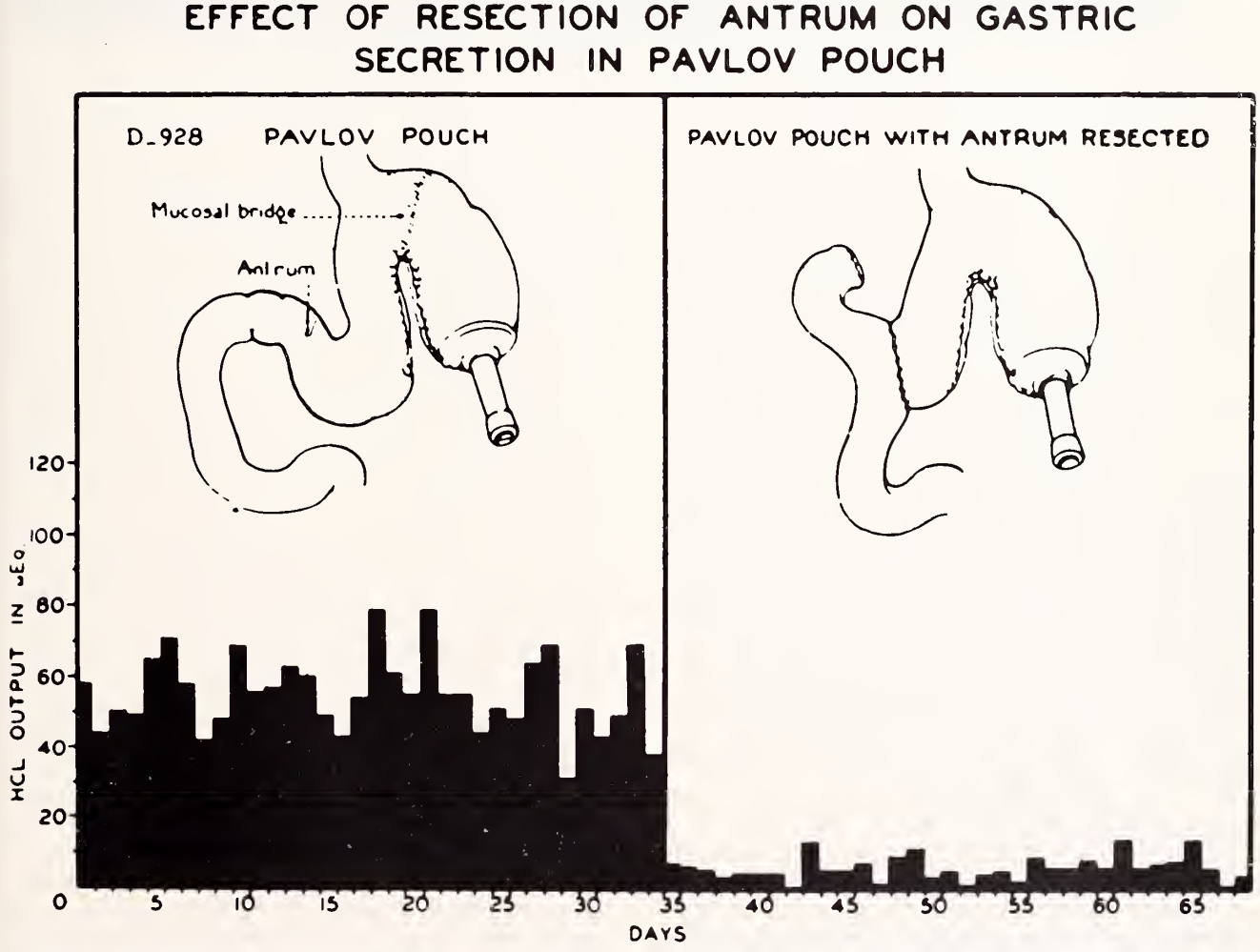


Figure 7. Reduction in secretion of HCl from an isolated partial stomach pouch in the dog following resection of the pyloric antrum. The pouch did not have significant vagal innervation.

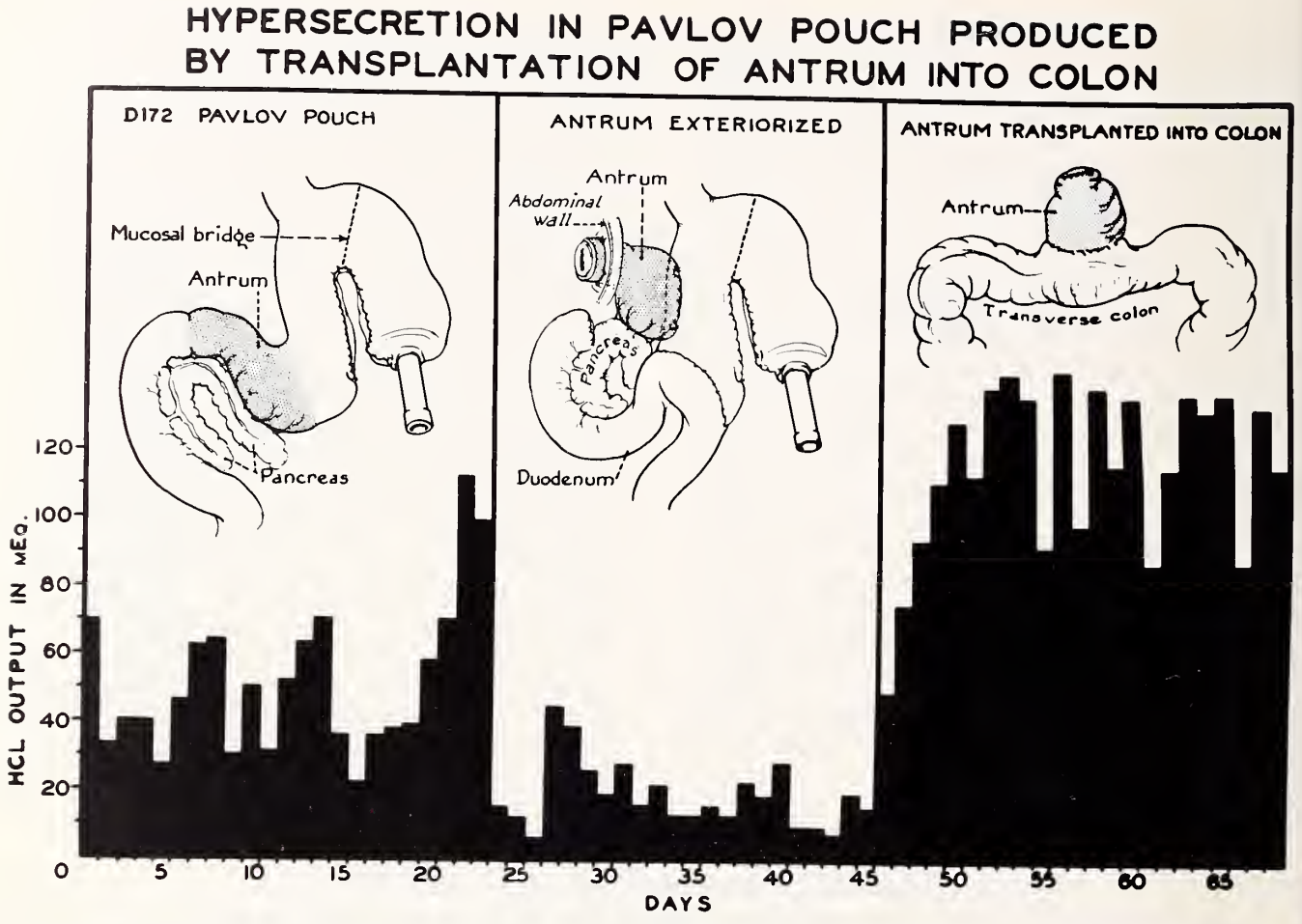


Figure 8. Experiment demonstrating the importance of an acid environment in the regulation of antral hormonal function.

patients are much more likely to be able to maintain normal body weight. This can be summarized by saying that vagotomy plus a drainage procedure is less likely to produce iatrogenic disease. There are very few things in medicine more dissatisfying than to treat one disease and produce another. No one is more prone to do this than the gastric surgeon. Many of our efforts in the last 20 years have been pointed toward avoiding this pitfall.

Another advantage of the vagotomy-drainage procedure combination is that one is left with an easily performed secondary operation to use in those patients unfortunate enough to develop recurrent peptic ulcer. This is certainly a desirable state of affairs. When one is treating a chronic lifetime disease such as duodenal ulcer, one should not burn all his bridges behind him. Such a patient with recurrence is treated by a straightforward two-thirds subtotal gastrectomy, with a result as good as if it had been used as the primary procedure.

THERE ARE SOME DISADVANTAGES

Vagotomy plus a drainage procedure is certainly no total panacea for duodenal ulcer, and we do not wish to leave you with this impression. The first disadvantage is anatomical variation in the vagus nerve trunks. Although the majority of patients will have a well defined left and right vagus trunk just above the esophago-gastric junction, a variation of this will be present in 20 to 25 per cent of patients. With a minimum of experience, however, and with adequate surgical exposure, most of these can be adequately sectioned, so that 90 to 95 per cent of patients will receive adequate vagotomies. Related to the sometimes unavoidable incompleteness of vagotomy is the relatively high ulcer recurrence rate. However, in recent years, probably as the result of extended experience, the ulcer recurrence rate has leveled off in the five per cent range—not as high as originally thought.

At first we were disturbed because the lesion itself is not excised. Since about one-third of all our operations for duodenal ulcer are for hemorrhage, we were concerned that there would be a serious incidence of postoperative ulcer bleeding. However our experience, as well as that of others, had led us to believe that this is not an important disadvantage. In fact, we are now deliberately using this procedure for acutely bleeding duodenal ulcers, with direct suture ligation of the bleeding site at the time of pyloroplasty.

Another disadvantage has been in the obstructed patient with a huge, dilated, atonic stomach. If one adds the insult of vagotomy, which not only suppresses gastric secretion but also markedly depresses gastric motility, one can readily see that this might be a stunning blow to such a stomach.

Even here, however, we have found that with adequate preoperative and postoperative decompression of the stomach we are able to treat obstructed patients with vagotomy and and pyloroplasty without undue hospital morbidity.

PITFALLS TO BE AVOIDED

One of the common errors in vagotomy is to consider it an easy procedure. If one does not recognize the depth of the wound in which he will be working and the profundity of the anesthesia required for adequate exposure, and if he doesn't have enough experience in the feel of the fingers for localizing the vagal trunks, he will run into trouble. Many who begin doing this procedure approach it as if they were plucking on some violin strings in the dark, and this attitude is not conducive to an adequate division of the vagus nerves.

Another common pitfall is failure to recognize the crucial importance of a technically precise drainage procedure, whether it be gastrojejunostomy or pyloroplasty. Our other invited guest at this meeting, Dr. Joseph Weinberg, of Long Beach, California, has made an important fundamental contribution to our understanding of this phenomenon. In the unvagotomized stomach, almost any kind of drainage procedure that the surgeon wishes to perform will work adequately. This, however, is not true in the vagotomized stomach. If gastroenterostomy is used, it must be small and must be placed directly on the greater curvature, close to the pylorus. If pyloroplasty is used, the classic two-layer infolding method will seriously interfere with gastric emptying. There is no substitute for technical precision in this phase of the surgery.

Another pitfall in the use of vagotomy is the failure to recognize the motility defect created by the procedure. It is important to recall that the vagotomized stomach is not a paralyzed stomach; that the vagus is not motor to the stomach, but augmentor. The stomach is made up of smooth muscle, not skeletal muscle, and smooth muscle has the fundamental property of reacting in the absence of all extrinsic nerve supply. This problem resolves itself simply into a matter of waiting for adequate compensation to occur, so that the peripheral automatic motor mechanism will take over and the stomach will again be able to empty itself adequately. Adequate and thorough postoperative decompression of the stomach is therefore required. Although this can be accomplished by an indwelling nasogastric tube, we prefer a temporary Foley-catheter gastrostomy, using it to achieve decompression for three or four days, and then removing it, often in the Outpatient Clinic, on the tenth or twelfth day.

Another common oversight is the failure to recognize that the performance of vagotomy requires dissection, manipulation and retraction in and about the diaphragm in the left upper quadrant. Neglect of these details results in a high incidence of left lower lobe pulmonary atelectasis. Prevention is a matter of recognizing the likelihood of its occurrence and exercising adequate prophylaxis as a regular part of active postoperative care.

RECURRENCE IS RARE FOLLOWING VAGOTOMY AND PYLOROPLASTY

As noted earlier, the ulcer recurrence rate following vagotomy and a drainage procedure is lower than originally thought. The best long-term study has been reported by Burge of England. In a group of nearly 200 duodenal ulcer patients treated by vagotomy and pyloroplasty, his 10-year followup disclosed a recurrent duodenal ulcer rate of 3.2 per cent. In our early experience with vagotomy and gastroenterostomy, the recurrence rate was about 8 per cent. This constitutes one reason why we prefer pyloroplasty over gastroenterostomy. It also has shown us that at that time we were not performing our gastroenterostomies correctly, and as a consequence gastric emptying was inadequate. Gastric ulcers sometimes occur after vagotomy and pyloroplasty, and Burge observed this complication in 2.4 per cent of his patients. This is a direct result of gastric retention and prolonged stimulation of the antral gastrin mechanism. A non-infolding Heineke-Mikulicz pyloroplasty, as described by Weinberg, will, in large measure, prevent this from occurring.

At the present time, the ulcer recurrence rate after vagotomy and pyloroplasty compares favorably with that which one expects from a standard subtotal gastrectomy of the Hofmeister-Billroth II type.

What about the currently popular combination of vagotomy and hemigastrectomy or antrum resection? We used it rather intensively for several years, accumulating an experience with about 250 cases. Our final discouragement with it came when an ambitious and observant surgical resident looked up the records and calculated the hospital morbidity in our cases. It was in such sharp contrast with our experience with vagotomy and pyloroplasty that we have largely abandoned the former procedure. This brings us back to the point that you give up the one major surgical advantage of vagotomy when it is combined with antrectomy. Once more you must deal with a diseased duodenum, and this means you will inevitably have the same mortality and morbidity as with a subtotal gastrectomy. This has indeed been the experience of others as well.

The combined procedure of vagotomy and antrectomy is also theoretically unsound. Many apparently consider it a compromise between vagotomy and subtotal gastrectomy, but it is an unsound compromise on both practical and theoretical grounds. One may reason that he will knock out the nervous phase of gastric secretion by cutting the vagi, and will knock out the hormonal phase by removing the antrum. Unfortunately there is nothing sick about the antrum in duodenal ulcer disease. Direct studies in human beings have

indicated clearly that the pyloric antrum is histologically and functionally normal, just as in a patient without a duodenal ulcer. If we compare the basal gastric secretion in the duodenal ulcer patient with that of a normal individual, it is apparent that if we were operating on a normal person, we could double our reduction of gastric secretion by resecting the antrum. In the duodenal ulcer patient, however, the excessive gastric secretion is neurogenic in origin, so that theoretically the addition of antrum resection would further reduce gastric acid production by only about 10 per cent.

There is only one recommendation for this unlikely compromise of vagotomy and hemigastrectomy, and that is that the ulcer recurrence rate is the lowest of any operative procedure done for duodenal ulcer. It is reported in large series to be less than one per cent. However, we feel strongly that the price one pays for this lower recurrence rate is far too high. Reported experience in vagotomy-antrectomy indicates that the incidence of the dumping syndrome is very nearly as high as we expect with subtotal gastrectomy. This means that once again we are back in the sad dilemma of producing iatrogenic disease.

We now prefer pyloroplasty over gastroenterostomy as the drainage procedure to be used with vagotomy. In part, it is our choice because of the lesser incidence of the dumping syndrome. In fact it almost never occurs after vagotomy and pyloroplasty. Even more important, however, is the physiologic reason. In the dog with a small isolated stomach pouch, a gastroenterostomy to the animal's main stomach often produces a pronounced increase in gastric acid secretion from the isolated stomach. This indicates that the hormone gastrin is being released in larger amounts, and explains some of our early poor results with vagotomy and gastroenterostomy. To some extent, this sequela can be obviated by making the gastroenterostomy small and close to the pylorus. Apparently gastroenterostomy allows alkaline duodenal fluids to bathe the antrum. You will recall our demonstration of the importance of the acid environment of the antrum in the physiologic control of the hormone gastrin. For reasons not entirely understood, pyloroplasty does not produce this exaggeration of gastric-hormone production. Thus it is a safer procedure to combine with vagotomy, and apparently reduces the incidence of recurrent, especially gastric, ulcer.

GASTRIC ULCER

I should like to wind up my presentation with a brief discussion of gastric ulcer. There is one very important concept in this regard. It is that gastric ulcer is totally different from duodenal ulcer, both pathophysiologically and clinically. For the surgeon, this means that it certainly should not be treated in the same way. In marked contrast to the hypersecretion seen in duodenal ulcer, studies of the basal gastric secretion in patients with benign gastric ulcer indicate that gastric ulcer patients actually secrete less than do normal individuals. Thus gastric ulcer is not the result of neurogenic hypersecretion. Because of this striking pathophysiologic difference, gastric ulcer is ideally treated by conservative distal partial gastrectomy, with the Billroth I end-to-end gastroduodenal reconstruction. Since the duodenum is normal, the dissection is easy and safe. The major share of the stomach can be preserved, and the functional results are therefore excellent. Because of the lower acid secretion in these patients, marginal ulcers very rarely occur. Thus, speaking in general terms, surgery is somewhat more effective for gastric than for duodenal ulcer.

There is a small group, probably about 20 per cent, of gastric ulcer patients in whom this lesion occurs as a complication of stenosing duodenal ulcer. Because of the striking pathophysiologic difference, it is important that the surgeon identify this group and apply appropriate surgical principles in their care. A typical example recently presented itself to us. This patient, a male aged 35, had had duodenal ulcer since he was a high school student. One perforation had been surgically closed, and several bleeding episodes requiring transfusion had occurred. The patient presented to us with a marked exacerbation of pain for several months. X-ray examination disclosed severe deformity and stenosis of the duodenal bulb and a large ulcer crater on the lesser curvature of the stomach. His basal gastric secretory rate was 8.8 mEq. per hour—about eight times the normal level. The patient was treated by vagotomy and pyloroplasty, and nine days later, x-ray disclosed complete healing of the gastric ulcer. Six months postoperatively, the patient was asymptomatic, and a gastric analysis showed a secretory rate of 0.2 mEq. per hour. These patients have the characteristic neurogenic hypersecretion of duodenal ulcer, combined with antral hyperstimulation resulting from pyloric stenosis. It is important that both physiologic defects be corrected by the surgeon.

CONCLUSION

In a single lecture it is easy to oversimplify a complex subject. Although neurogenic hypersecretion of central origin is of basic importance in most patients with duodenal ulcer, other mechanisms both known and unknown are obviously important either regularly or occasionally. The duodenal ulcer itself is only the response of the duodenum to an influx of acid gastric juice in the absence of adequate protection. There are occasional special circumstances, such as exist in the so-called Curling's ulcer after extensive burns. The marked difference between the sex incidences—the preponderance of males—indicates clearly that the general endocrine milieu must be important. There

is evidence supporting a genetic factor in duodenal ulcer, and similarly there is evidence that certain commonly ingested drugs, such as aspirin, suppress mucus secretion and thereby may reduce the resistance to acid gastric juice. However, in our efforts in medical and surgical control of peptic ulcer, we come back to the basic common mechanism, namely, that there is sufficient hydrochloric acid present to permit the enzyme pepsin to digest away a section of the gastroduodenal wall.

In conclusion, I should like to refer to this presentation as the Dragstedtian doctrine. Dr. Lester R. Dragstedt received the Ph.D. degree in physiology at the University of Chicago, and the M.D. at Rush Medical College. His first teaching position was in the Department of Physiology at the State University of Iowa. He is a surgeon who did not have a formal surgical residency, and learned much of operative surgery in the experimental laboratory. Yet he is well known to you as one of the great surgeons of our time. Dr. Dragstedt, along with Dr. Wangensteen and others whom I have not mentioned, represents what I believe to be the third stage in the modern development of surgery. We can say that this field of medicine has passed through the anatomic era of John Hunter, then the pathologic era of Billroth, and is now in the physiologic era.

Management of Upper Gastrointestinal Hemorrhage

JOSEPH A. WEINBERG, M.D.
Long Beach, California

MY SUBJECT is the management of upper gastrointestinal bleeding, with special reference to massive hemorrhage in duodenal ulceration.

DIAGNOSIS

There are multiple causes for bleeding from the gastrointestinal tract. Though only a few occur with any frequency, the less common ones are responsible frequently enough to tax the diagnostic acumen of surgeon, internist and radiologist. Hemorrhage from duodenal ulcer accounts for more than 50 per cent of the occurrences of severe bleeding from the gastrointestinal tract, and for more than 75 per cent of bleeding peptic ulcers, but other causes of hemorrhage must be kept constantly in mind.

The differential diagnosis may be extremely difficult in patients with hepatic cirrhosis because in such cases the bleeding may be from a duodenal ulcer, from varices complicating the cirrhosis, or from both ulcer and varices. This difficulty in differentiation is a consequence of the known tendency of duodenal ulcer to occur with Laennec's cirrhosis. In an emergency, one may perform an operation with the intent of establishing a portacaval shunt only to find that the bleeding is from a duodenal ulcer. We have had one experience in which a portacaval shunt had been performed previously in an emergency hemorrhage situation. When the patient was admitted to our hospital a year later with severe rebleeding, it was thought that the cause was bleeding varices secondary to cirrhosis and that nothing more could be done surgically. At autopsy, however, it was found that the bleeding had been from a large duodenal ulcer.

An exactly similar situation arose more recently. In that case, a well-placed Sengstaken tube failed to arrest the hemorrhage, and the possibility of a bleeding duodenal ulcer was considered. Operation confirmed the suspicion, and the patient made a good recovery following ligation of the bleeding vessel combined with pyloroplasty and vagotomy.

It may also happen that some other condition may be the cause of the hemorrhage when bleeding peptic ulcer is suspected. Dr. Gius has told us of his fascinating studies on the relationship between hemangiectatic lesions of the intestine and vascular abnormalities of the mouth and other areas. We have had several lesions of that kind in which there was free bleeding from the mucosal surface of the jejunum. If a bleeding ulcer is suspected and none is found, the serosal surface of the jejunum should be examined immediately for the presence of a hemangiectatic pattern that may be seen through the peritoneal covering of the intestine. I stress immediate ex-

Dr. Weinberg, chief of surgery at the Long Beach Veterans Administration Hospital and Clinical Professor of Surgery at UCLA, made this presentation at a short course on peptic ulcer surgery at the S.U.I. College of Medicine, in Iowa City, on December 4, 1963.

amination because the pattern tends to disappear after a handling of the intestine. One of these patients had been operated on previously in our clinic, but the lesion had not been detected that first time. From our own experience, I think that the lesion, though unusual, is not extremely rare, and that if the surgeon has the possibility in mind, he will discover it more often than has been the case in the past. We have dealt with this situation by limited jejunal resection together with vagotomy and pyloroplasty in one case, and by vagus-nerve section and pyloroplasty in two others. The vagotomy is performed with the hope that the lessened intestinal activity following vagal denervation will be a protection against further bleeding. In these cases, the bleeding has a tendency to become arrested spontaneously, and to recur at unpredictable intervals.

Another lesion to be kept in mind as a source of gastrointestinal bleeding is leiomyoma of the gastrointestinal tract—usually in the stomach or duodenum. This lesion may be complicated by erosion of the covering gastric or intestinal mucosa, with resulting bleeding from the ulcerated area. The diagnosis is usually made by palpation of the involved segment of the tract. The lesion often escapes detection during the preoperative examination, and should be thought of if a peptic ulcer is not found at operation.

A lesion which we saw recently in our clinic and which was the cause of severe hemorrhage was a neurofibroma of the jejunum incident to neurofibromatosis, i.e., von Recklinghausen's disease. In that case, mucosal inspection of a deformed duodenum failed to show an active ulcer. Search was then made of the small bowel because of the absence of blood proximal to the duodenojejunal ligament as determined by external inspection. A tumor about 1 cm. in diameter in the proximal portion of the jejunum proved to be the source of bleeding. The lesion was excised together with a small segment of the intestine. The lesson from this case is that if a patient with von Recklinghausen's disease has intestinal bleeding, a neurofibroma of the bowel should be suspected. We have since learned that several similar cases have been reported.

Another rare lesion to be thought of is bleeding from a Meckel's diverticulum. As is generally known, the Meckel's diverticulum may contain acid-secreting mucosa that leads to bleeding—although perforation is more likely.

Dr. Fischer has spoken to us about the role of radiologic examination as an aid in determining the presence of peptic ulceration during bouts of massive gastrointestinal hemorrhage. This is a test which is too often omitted in cases which offer difficulty in diagnosis because of lack of a good history of ulceration. The test is easily done with appropriate contrast medium while preparations for surgery are being made, and it may give the necessary additional evidence to make diagnosis fairly certain. A negative test result is not so reliable as a positive one, nor should one place entire reliance on x-ray evidence alone. Occasionally an ulcer will be overlooked because it is so large that the observer fails to recognize it as an ulcer. This is not an uncommon error. Such a mistake is especially likely with the massively bleeding ulcer which tends to be of large size.

A history of ulcer may be misleading, even though there is proof that the patient has had ulcer disease. There may be extensive distortion of the duodenum as the result of scarring from previous ulceration, yet the bleeding may be from another source. Bleeding should be seen during the operation, at the time of exposure of the duodenal mucosa, if the diagnosis is to be absolute. If there is doubt at the time of operation, the chances are that the bleeding is from some other source.

MANAGEMENT OF MASSIVE HEMORRHAGE

We now come to the technic of management of massive hemorrhage from the duodenal ulcer. First, we should have common agreement on what constitutes massive hemorrhage in duodenal ulcer. For the most part the reporting of results of different procedures has become meaningless because there is no basis for comparison. Patients who are operated on electively after cessation of bleeding are not to be classified with patients with active hemorrhage at the time of operation. The mortality in the former group is little if any different from that following other elective operations for ulcer. The patient with massive hemorrhage is in shock or impending shock, he is receiving transfusions in the preoperative and operative periods, and the hemoglobin and hematocrit readings are reduced to critical levels. Passage of large amounts of fresh or recently clotted blood by the bowel usually occurs. More often than not, the patient has associated debilitating disease and is in the older age group, both of which factors add to the seriousness of the episode. The ulcer itself is usually large—not infrequently 3 cm. or more in diameter—and penetrates to the pancreas. The rim of the ulcer is raised and thickened, and the base is indurated by scar tissue.

It is important to operate without delay, once the diagnosis has been made or surmised. How serious the patient's condition has become when he is first seen makes no difference. It cannot be made better by days of waiting for the bleeding to stop. One of the most trying situations one can experience is first to have a patient placed on medical management because his condition is considered to be too poor for operation, and then to have the opinion reversed, in favor of operation, because medical management is not succeeding. Too often in these cases what was a poor situation for surgery in the first place has become an impossible situation. The best chance for surgery occurs

when the patient is first seen, only enough time being taken to prepare the patient with several transfusions and to make pertinent tests and examinations. In determining success or failure, the time element is of as much importance as the technic of operation.

TRANSFUSIONS

A word about transfusions is in order. Although transfusions are of the greatest value in this emergency, they should not be used to excess. The use of 30 or more transfusions during an episode—not an uncommon practice—means that operation is unnecessarily delayed. This generalization holds with few exceptions. In our clinic we make it a practice to operate after no more than three transfusions in one day, or six in an episode during which the hemorrhage stops and then starts again within a day or two. Many of our patients have had more than that number preoperatively only because the excessive transfusions were given before the patients were seen by us. Not only do excessive transfusions delay the operation, with resulting anoxia and degeneration of vital tissues, but each transfusion itself may be harmful to the recipient. Homologous tissue reaction may be induced by even the best-matched bloods, since each transfusion introduces a foreign protein. Wisely used, transfusions have advantages which far outweigh their disadvantages. But unwisely used, the reverse is apt to be the case.

LIGATION, PYLOROPLASTY AND VAGOTOMY TECHNICS*

The needle which we use is one of the essentials for successful ligation of the bleeding vessel. It is a No. 5 Mayo half-circle needle, small enough for easy maneuvering in the limited working space within the duodenum, and stout enough to resist breakage in its passage through the indurated ulcer and around the bleeding vessel. The ordinary intestinal needle should never be used. Either it will break when inserted deeply, or it will be inserted superficially to avoid breakage, with the result that the ligature does not get completely around the bleeding vessel. The ligature is of nonabsorbable material. I prefer a fairly heavy cotton—00 cotton—which will not tend to break as it is tied. Gut suture should never be used, for it tends to be weakened by the action of the digestive juices, with the result that there is rebleeding a week or so after the operation and before the ulcer has had a chance to heal.

As soon as the abdomen is opened and the diagnosis is established, the pyloroduodenal canal is opened with a longitudinal incision across the pyloric ring—the first step of the pyloroplasty procedure. The ulcer is exposed, the bleeding site is determined, and three or four Allis forceps are placed around the thick rim of the ulcer to facilitate exposure. This will bring the ulcer into the field to expedite the ligation. The needle, with attached 00 cotton suture, is inserted in a figure-of-8 around and close to the bleeding vessel, in such a manner that the tied knot will fall exactly upon the bleeding point. One ligature will usually suffice if it is accurately placed. Although there is a very remote danger of encroaching on the common bile duct with the ligature, because of the proximity of the duct to the usual site of the ulcer, this mishap has never occurred in our experience with some 90 cases. Thus, although the possibility is always present, it must be accepted as a calculated risk. On the basis of statistics, the danger of injury to the common duct is much less with ligation and pyloroplasty than it is with resection. In contrast to the occasional reported occurrence with partial gastric resection, to my knowledge none has ever occurred with ligation and pyloroplasty.

I should mention that it is not necessary to sew muscle tissue over the bleeding point for hemostasis, nor is it wise to sew the edges of the ulcer together over the ligated vessel. These maneuvers are time-consuming and give only a false sense of security. In this emergency the least that one can do to accomplish hemostasis, the better it is for the patient.

After a minute or two to observe the site of ligation and to make sure that bleeding has been completely arrested, one closes the longitudinal pyloroplasty wound in the transverse direction. The closure is made with interrupted nonabsorbable sutures—I prefer cotton 0000—placed so that they include the full thickness of tissue on each side. This brings mucosa to mucosa, muscularis to muscularis and serosa to serosa without eversion of mucosa. Closure with a single row of sutures is the key to a well functioning pyloroplasty. The impairment of the lumen caused by the infolding of tissue with multiple-row closure is often just enough to prevent the free passage of food from the stomach into the intestine. Not only does single-row closure give better emptying, but experience shows it to be safer than multiple-row closure from the standpoint of leakage from the suture line. There has been no evidence of leakage in the more than a thousand pyloroplasties we have performed in this manner. For successful emptying, I cannot overstress the importance of single-row closure performed in the manner described here.

The vagotomy is performed according to the Dragstedt principle, by dividing the left and right vagus nerves at the mediastinal level 3 to 4 cm. above the esophageal hiatus, through the abdominal approach. I shall not go into detail on the

* The reader is referred to the monograph, "Pyloroplasty and Vagotomy for Duodenal Ulcer," by Joseph A. Weinberg, M.D., in the April, 1964, issue of CURRENT PROBLEMS OF SURGERY, published by Year Book Medical Publishers, Inc., Chicago, for a detailed description of the technic of the operation.

technic, for any variations from the well known Dragstedt method are of minor significance as compared to the importance of the Dragstedt principle.

Now for the gastrostomy tube and its placement. We follow the method of Farris and Smith, in which a Foley balloon catheter is inserted into the stomach through a stab wound in its anterior wall to emerge through the anterior abdominal wall. Drainage and occasional suction through this tube during the first five postoperative days serves to keep the stomach deflated and to prevent the excessive accumulation of fluids that might otherwise tend to occur in the first few postoperative days. The gastrostomy tube is much more comfortable for the patient than is the nasogastric tube, and it is free from the complications of the latter.

POSTOPERATIVE CARE

It is my opinion that the early postoperative program plays an important part in preventing or lessening some of the unpleasant sequelae peculiar to operations on the gastroduodenal segment—the so-called dumping symptoms. We follow a rigid program of nothing by mouth during the first five days, and give appropriate fluids intravenously during this period. The gastrostomy tube is then withdrawn, and the patient is given bland liquids for the next two days. A soft bland diet is given from the eighth through the twelfth day, and after that the patient receives a diet high in proteins, intermediate in fats and low in carbohydrates, with the amount of food being gradually increased as it is tolerated. No sugar in any form is given during the first several postoperative months. This last is probably one of the main factors, if not *the* main factor, in preventing so-called dumping.

RESULTS

One of the oldest patients in our series of massive hemorrhage was 88 years of age at the time of operation. The bleeding ulcer in his case was further complicated by an almost complete obstruction, and as a result he was emaciated. There was a history of perforation of the ulcer some years earlier. His ligation, pyloroplasty and vagotomy were well tolerated, and his postoperative convalescence was remarkably smooth.

There have been four surgical deaths in the 91 operations performed since the inception of the program. In one, death was the result of dissolution of a gut suture used for the ligation of the bleeding vessel, with resulting fatal hemorrhage on the eighth postoperative day. Since that experience, we have used only nonabsorbable suture for the ligation. The other three deaths were in patients who had been in a precarious state at the time of operation. Indeed two of them had been in delirium tremens during the operative period.

Reoperation has been performed in five patients. Four were for rebleeding, and the bleeding was controlled by hemigastrectomy in elective periods. All recovered satisfactorily. Reoperation was performed in one case to relieve obstruction resulting from an unsatisfactory pyloroplasty. In operating for the control of massive hemorrhage, one should favor pyloroplasty even though the pyloroduodenal segment is distorted and constricted by scar tissue. The procedure is so much simpler and can be performed in so much shorter time that it should be favored, even though a second operation may be needed later. Time and simplicity are important considerations in determining the outcome in these critical situations.

Des Moines-Polk County Health Department

TUBERCULOSIS CASE REGISTER

AUGUST, 1964

Location & Treatment Status	Activity or Sputum Status Unknown	Active Sputum Pos.	Active Sputum Neg.	Quiescent or Inactive	Totals
In Institutions	20	19	3	8	50
At Home—On Drugs	2	6	0	155	163
At Home—Not on Drugs	10		1	29	40
Totals	32	25	4	192	253

1) Per cent of known cases (excluding known inactive) with status unknown 52.45%

2) Per cent of known active cases on drug therapy 96.55%

3) Per cent of known cases (excluding known inactive):
   In institutions 68.85%
   At home on drugs 13.11%
   At home not on drugs 18.04%

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Stress Ulcers and the Neurosurgeon

G. E. PERRET, M.D., Ph.D.
Iowa City

At the beginning of his lecture, Dr. Woodward stated that the basic cause of ulcers is in the central nervous system, and that the stomach is just the end-organ. The neurosurgeon's contribution to knowledge concerning ulcers is based on clinical experience with postoperative and post-traumatic gastrointestinal hemorrhage. In the fourth Balfour Lecture, given at the University of Toronto, April 8, 1931, Harvey Cushing[1] stated, "The attempt to find a reasonable explanation for the acute perforative lesions affecting the esophagus, stomach and duodenum, which in three instances caused early fatality after operations for cerebellar tumor, has led, not only to a review of the extensive literature on the neurogenic aspects of ulcer pathogenesis, but also to certain experimental observations that strongly suggest the presence in the diencephalon of a parasympathetic center."

In his conclusion, Cushing stated the following: "The parasympathetic apparatus in all probability, under normal conditions, is likewise strongly affected by cortical and psychic (Pavlov) influences. However this may be, direct stimulation of the tuber or of its descending fiber tracts, or what theoretically amounts to the same thing, a functional release of the vagus from paralysis of the antagonistic sympathetic fibers, leads to hypersecretion, hyperchlorhydria, hypermotility and hypertonicity, especially marked in the pyloric segment. By the spasmodic contractions of the musculature, possibly supplemented by accompanying local spasms of the terminal blood vessels, small areas of ischemia or hemorrhagic infarctions are produced, leaving the overlying mucosa exposed to the digestive effects of its own hyperacid juices."

Cushing's article was published in 1932. Since then, approximately 100 papers have been written on the subject, but little more is known. Of course, we must remember that gastrointestinal hemorrhages occur not only as complications of brain tumors, neurosurgical operations and brain injury. They also occur after any type of trauma, after burns and after other stressful operations. We see them frequently in spinal cord injuries involving, especially, the cervical portion of the spinal cord.

Davis *et al*[2] reviewed the records of 1,300 patients on whom intracranial operations had been performed in a period of 30 years, and found an incidence of 2.5 per cent of acute upper gastrointestinal tract ulcerations and hemorrhages.

In a period of 18 months, 203 intracranial operations were performed in this institution, and in that period we observed 11 upper gastrointestinal tract complications—an incidence of 5.4 per cent. Eight of those 11 patients died after repeated massive hematemesis. The histories of only two of the 11 patients suggested previous gastric dysfunction. The histories of the remaining patients contained no suggestions of peptic ulcer.

In a group of patients with cervical cord injuries, we have seen that gastrointestinal bleeding occurs in approximately 20 per cent of cases. Most of the hemorrhages are of short duration and have slight consequences. Only a few are severe. They occur in patients of any age, even in infants and children.

Why do patients with brain tumor, with or without signs of obviously increased intracranial pressure, have no preoperative gastrointestinal tract disturbances, even if the tumor involves the basal ganglia, the hypothalamus and their efferent or afferent tracts? Why do the gastric hemorrhages and/or ulcerations usually occur several days after operation or trauma? Why do patients who have had no known injuries to the thalamus or hypothalamus get sudden, unexpected gastrointestinal tract disturbances, for instance, following cervical cord injuries, meningitis or cerebrovascular thrombosis? Why are these disturbances more frequent in men than in women? These questions and many others still remain unanswered.

GASTRIC SECRETIONS

Studies on gastric secretions do not reflect obvious differences between healthy people and people with brain disease. Hydrochloric acid secretion apparently is not influenced by most central nervous system disorders. In a series of 17 psychotic patients whom we treated in 1950 and 1951 with open bilateral prefrontal lobotomies, gastric acidity and fresh peptic activity determinations were carried out preoperatively, one week after opera-

Dr. Perret, a professor of neurosurgery at S.U.I., made this presentation at a postgraduate course on peptic ulcer in Iowa City on December 4, 1963.

tion, and three months after operation. We found no significant gastric secretory changes following these interruptions of the anterior frontal regions from the rest of the brain. Even the volumes of fasting gastric secretion were the same preoperatively and postoperatively. Hydrochloric acid determinations in response to histamine were also the same. Fresh pepsinogen value determinations were the same. These findings were corroborated by other investigators. Of course, we cannot assume that all local factors in the stomach remained constant over a period of six days following craniotomy. We know from experimental and clinical data that gastric motility and secretions change constantly, depending upon intrinsic as well as extrinsic stimuli.[7]

The problem of anorexia can also be raised. Anorexia is commonly seen following trauma to the cervical cord and cerebral injuries. We have seen it in many patients with brain tumors. It has been produced in cats following cervical cord transection, but not after bilateral vagectomy.[8] Anorexia may have something to do with local disturbances within the stomach. The problems of atonia of the stomach and atonia of the gastrointestinal tract with paralysis may also play a role in the development of ulcer.

STRESS

The concept of stress and the neurosecretory mechanisms have not completely explained the pathogenesis of the disturbance.

Gastric hypersecretion, acid as well as peptic, has been demonstrated during cortisone administration in dogs with and without vagal innervation.[9] Gray *et al*[6] have shown that the administration of adrenocorticotrophic hormone or cortisone and the physical stress of surgery increase the secretion of gastric hydrochloric acid and pepsin in human beings.

French *et al*,[5] in 1952, observed a group of patients with gastrointestinal hemorrhage, hemorrhagic erosion and ulceration in association with intracranial disease. They also presented experimental data in which hypothalamic lesions were carefully oriented stereotactically in cats. In a group of 13 cats, ulceration and/or hemorrhage occurred in all but one animal, and the authors concluded that lesions which involve the hypothalamus (Cushing's diencephalon), or its efferent or afferent pathways, predispose the patient to gastrointestinal tract disease, and the latter, in turn, is precipitated by the stress of illness and the trauma of surgery. Stimulation experiments in the monkey revealed anterior hypothalamic influences increasing the secretion of gastric hydrochloric acid and blocked by vagotomy and delayed responses to posterior hypothalamic stimulation blocked by adrenalectomy.[9]

On the other hand, Davis *et al*,[2] in 1955, were unable to reproduce gastrointestinal tract pathology in 15 cats after the production of destructive lesions in the anterior and posterior hypothalamus. Their lesions were also stereotactically done.

Vascular phenomena may be significant in the formation of a gastric erosion. Experimentally, erosions were found related to foci of ischemia produced by local vasoconstriction. This had already been suggested by Harvey Cushing.

In 1951 Eliasson *et al*[3] reported changes in intestinal blood flow unrelated to change in blood pressure after hypothalamic stimulations. Changes in the vascular supply to the gastrointestinal tract probably play a role in the production of acute hemorrhages. It was also found that hypothalamic stimulation did not stimulate the formation of free acid, and it is believed that increased acidity is not necessary for the initial production of gastric mucosal erosions. Acidity may participate in later stages in the development of the ulcer.

Feldman *et al*[4] reported in 1961 that shock stimulation of the anterior hypothalamus in the preoptic region by means of stereotactically-oriented electrodes caused the appearance of acute erosions and hemorrhages in the gastric and duodenal mucosa in 18 out of 31 cats. The erosions usually involved the superficial layers of the mucosa and were surrounded by dilated venules, hemorrhages and hyaline thrombi. The hemorrhages were either sub- or intramucosal. It was thought that the necrotic changes observed in the superficial layers of the mucosa may have been the result of transistory gastrointestinal circulatory alterations which were not necessarily accompanied by changes in blood pressure.

Vasoconstriction is usually generalized, is frequently seen associated with spinal cord injuries, brain injuries, increased intracranial pressure and brain tumors, and may be the result of an increase of adrenocortical hormones liberated by changes in the function of the neurosecretory cells of the hypothalamic nuclei. It is not known whether these changes are the result of inhibitory or of excitatory stimuli, whether they are caused by cerebral vasoconstriction and hypoxia, or whether they result from some other physiologic disruption of pathways leading to the hypothalamus. We still may agree with Harvey Cushing's statement, "It may easily be highly-strung patients inclined to forms of nervous instability classified as parasympathetic, through emotion or repressed emotion incidental to continued worry, anxiety and heavy responsibility combined with other factors such as irregular meals and excessive use of tobacco who are particularly prone to have chronic digestive disturbances with hyperacidity often leading to ulcers—effects fully comparable to those acutely produced by irritative lesions experimentally made anywhere in the course of the parasympathetic system, from the diencephalon to its radial terminals."

As soon as gastrointestinal tract hemorrhage is suspected or found in our neurosurgical patients,

as well probably as in other patients, all oral feedings are stopped, the patient is fed by the intravenous route, gastric suction is instituted, blood determinations are made, and if necessary the patient is treated with blood transfusions. After a few days the patient is given a liquid diet, and later a bland, soft diet. Most of the hemorrhages stop within 24 hours to 36 hours, and are not massive. Massive hemorrhages have been helped by gastric cooling.

The hemorrhages which led to fatalities were sometimes unaccompanied by hematemesis, and the hemorrhage remained unsuspected until the patient showed signs and symptoms of shock. The majority of patients who have recovered from gastrointestinal tract hemorrhages have had no further symptoms of gastric dysfunction when seen months or years after craniotomies or laminectomies.

At the present time the highly-strung neurosurgeon still worries about the stress ulcers of his patients, while the more sedate neurophysiologist gradually discovers the pathogenesis of the ulcers. But who will help us prevent them?

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What Next?

DANIEL F. CROWLEY, M.D.
Des Moines

I MUST CONFESS that this talk has been given before, in Iowa City recently on the occasion of the twenty-fifth year reunion of my medical class. Inasmuch as the class and I both survived its presentation, it seemed not unreasonable to take the risk again and present it as a presidential address at this annual meeting of the Iowa Academy of Surgery.

I should start by explaining the meaning of my title, "What Next?" But in order to do so, it is necessary that I digress for just a moment. I was somewhat uncertain, after having been asked to give a talk at the class reunion, as to what would be an appropriate as well as an interesting subject for the occasion. I worried about the matter for some time, and at last, somewhat haltingly, I told a friend and former classmate that I was considering a talk about my failures. He was enthusiastic about that idea, and declared that whereas he himself would not quite measure up, I was a big enough person to handle such a daring subject. Needless to say, I was quite flattered by his appraisal of my character.

Later, however, while meditating on my noble friend and his comments, I realized with horror how vanity had unhinged my common sense. If I spoke publicly of my failures, almost every doctor in the state, sooner or later, would hear stories of my apparent incompetence. Right then and there I decided that I would not talk of my failures, but rather that I would speak on a somewhat innocuous subject—the subject of incisions, specifically of abdominal incisions.

Really, I have no particular interest in incisions, for after all an incision is but the route or path by which a surgeon approaches his business of the day. Yet no matter how vital that business, the route has some importance too. Just as a prudent astronaut with business on the moon would no doubt give attention to his route, so also a prudent surgeon gives some thought to his incision.

I have sometimes wondered whether incisions ever change, for it is a changing world, and everything else seems to change. When we were in school, many of us learned of an atomic table with 92 elements, some as yet undiscovered but each with a specific atomic weight. Presumably that table contained the beginning and the end of all

Dr. Crowley made this presentation as his Presidential Address at the annual meeting of the Iowa Academy of Surgery, in Mason City on September 20, 1963.

knowledge of the elements. Now, however, we recognize isotopes, and a variation of elements and atomic weights numbering not just 92 but in the thousands.

We once learned—and believed—that mass was indestructible. It could be changed, but neither created nor destroyed. Now there is known to be an equivalence between mass and energy, and one may become the other.

New theories have gained acceptance, and words have lost their meaning. The shortest distance between two points, which in the past was always a straight line, may very well be a curved line in space; and space itself, although without boundaries, may curve upon itself. Light too may curve, and is said to have characteristics of both wave and particle.

It was once believed that if you were traveling on a train going 15 miles per hour, and if you were running forward in the aisle at a speed of 10 miles per hour, your total speed in relation to the ground would be 25 miles per hour. Now, it is known that your total speed would be somewhat less than 25 miles per hour.

We now recognize the truth of something even more incredible: Time and clocks slow down with increasing speed of motion, and the heart—which because of its rhythmic beat is a type of clock—also slows with the increasing speed of the body. As a matter of fact, the astronauts who have circled the globe at tremendous speeds have aged less during those trips than would have been the case had they never left the ground.

Facts no longer seem exact and precise, and the discovery of new facts is limited only by the imagination. Surely, with all this evidence of change about us, it was only reasonable to believe that such commonplace and useful things as incisions can also change. This, then, is the thesis of my remarks today: Incisions can change, too.

NO NEW INCISIONS HAVE BEEN INTRODUCED RECENTLY

In pursuit of evidence to support this concept, I reviewed two textbooks on abdominal surgery and quickly found descriptions of 37 different abdominal incisions, each of which had been assigned the name of its originator. The list included some of the great names in surgery, names such as Mikulicz, McBurney, Fowler, Pfannenstiel, Kocher, Mayo Robson, Czerny and Perthes. Many of the incisions had much in common, but all of them had one unvarying characteristic—they were old, belonging to other and older generations. Belatedly, I realized that a textbook was no place in which to find descriptions of the newer incisions, and that I must look to the journals.

I then reviewed the INDEX MEDICUS for the past 25 years. I looked for a heading "incision," and also for a subheading "incision" under "abdomen." I found neither. There wasn't a single INDEX reference in the volumes for the past 25 years on the subject of incisions! At the end of my tedious review, I was appalled by the realization that in spite of my certainty that incisions can change, in truth they have not!

Parenthetically, I might mention that in my vain search through the INDEX MEDICUS, I repeatedly made the observation that if an "incision" heading had been present, it would have fallen alphabetically between the listed and adjacent headings "impotence" and "income tax." It came to my mind that those are two subjects which, at the time of my graduation from medical school 25 years ago, were of no interest to me at all. But now, as the years go by. . . .

THE "Z" INCISION

Basically, I think, what interest I have in incisions has resulted from my developing an intense dislike of two occasional and unhappy sequelae of abdominal surgery, namely wound evisceration and postoperative ventral hernia. I have made no study of the incidence of either evisceration or ventral hernia in my own patients, and I have no intention even to speculate on what it may have been. It should be enough for me to admit that I have had both complications on occasion, and as you know, a surgeon doesn't need to encounter many of either to develop quite an aversion to both.

A wound evisceration, by the way, is the only problem within the scope of medical practice that I prefer to meet in the middle of the night, rather than in the daytime. There are fewer people up and about in a hospital at night to discover and talk about one's troubles.

Somewhat less than a year ago, because of the negative attitude that I had developed in this particular area, I felt impelled to seek a new and better abdominal incision. In an undertaking of that kind, it was important that certain fundamentals be reviewed and kept in mind. I refer to the primary characteristics of a satisfactory incision. The primary requirement of an abdominal incision is that it provide good exposure. In this regard it is well to remember that useful incisions are not those which are adequate only for the unusually gifted technician who can operate effectively through an inadequate opening and from an awkward stance, but those that are suitable for you and me. A second requisite is that a minimum of postoperative-wound problems follow its use. By this I refer specifically to the early complication of evisceration and the late complication of ventral hernia. A third and much less important requisite is a favorable cosmetic result.

On the basis of my own observations—and these may be questioned by others who have had different experiences—I have reached four very definite conclusions regarding abdominal incisions and their characteristics:

1. Longitudinal incisions give the best exposure, but the greatest incidence of postoperative-wound trouble.

2. The McBurney (gridiron) incision gives poor exposure, but practically no postoperative trouble.

The gridiron concept, incidentally, has been used in other incisions besides McBurney's, but always with rather limited usefulness.

3. The ideal abdominal incision, on the basis of the preceding observations, would be some sort of combination of the longitudinal and gridiron incisions.

4. The type of suture material used is relatively unimportant.

With these problems and requirements clearly in mind, and after very careful thought, I finally developed the following original incision. I wish to designate it the "Z incision." I am well aware that, by custom, a new scientific technic or concept frequently is given the name of its originator, but modesty prevents me from taking such a step. If others insist, then what will be will be. But for now, let me proceed with a description of the "Z incision."

The skin incision is made longitudinally over the rectus sheath, either right or left, upper, middle or lower, depending on the operative procedure that is contemplated (Figure 1). One clears the exposed and appropriate area of anterior rectus sheath by undermining the skin and subcutaneous tissue as needed (Figure 2). The anterior rectus sheath is then incised in the shape of a "Z" (Figure 3). A careful observer will note from the illustration that the incision in the anterior rectus sheath forms, in actuality, not a "Z," but a mirror-image of the letter "Z" and a somewhat lazy mirror-image at that. The first two limbs of the rectus-sheath incision are full length, extending from the linea alba to the linea semilunaris and back again, but the third limb may be shorter.

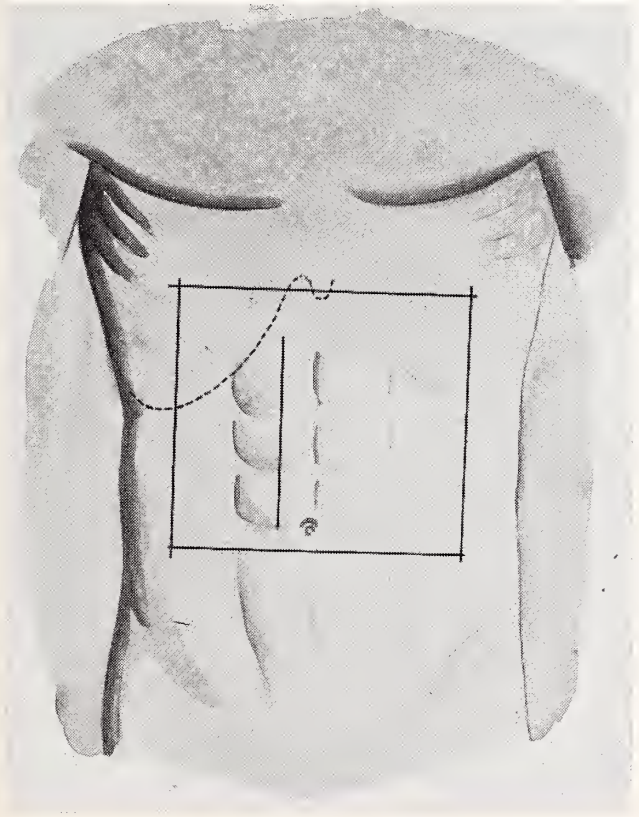


Figure 1. Site of longitudinal skin incision in right upper quadrant. The subsequent illustrations will include only the blocked-off area shown here.

The delineated segments of the rectus sheath, as illustrated in Figure 3, are then separated from the underlying rectus abdominis muscle by blunt and sharp dissection (Figure 4). The rectus muscle is mobilized and retracted well laterally (Figure 5), and then a longitudinal incision is made through the posterior rectus sheath and peritoneum midway between the linea alba and the linea semilunaris (Figure 5).

The completed incision, as required by the specifications for an ideal incision, is a longitudinal incision with a gridiron effect—the latter achieved by the diverse directions of the incisions in the anterior and posterior rectus sheaths, and the intact rectus abdominis muscle between.

Closure of the incision can be with either inter-

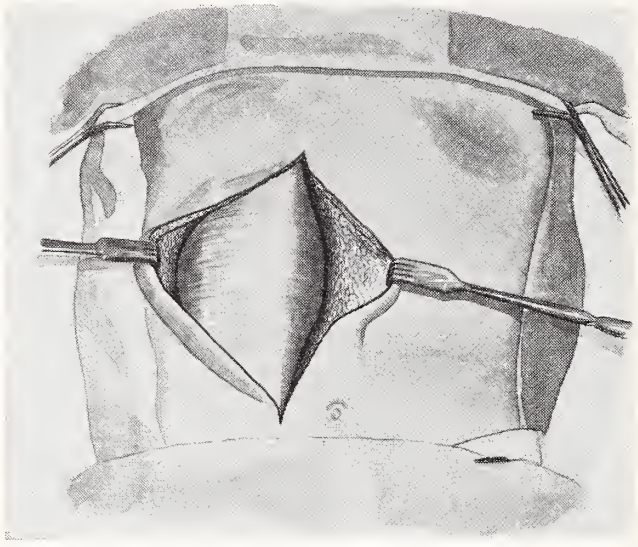


Figure 2. The skin and subcutaneous tissue have been undermined over the appropriate area of rectus sheath. The extent of undermining medially has been exaggerated in this sketch.

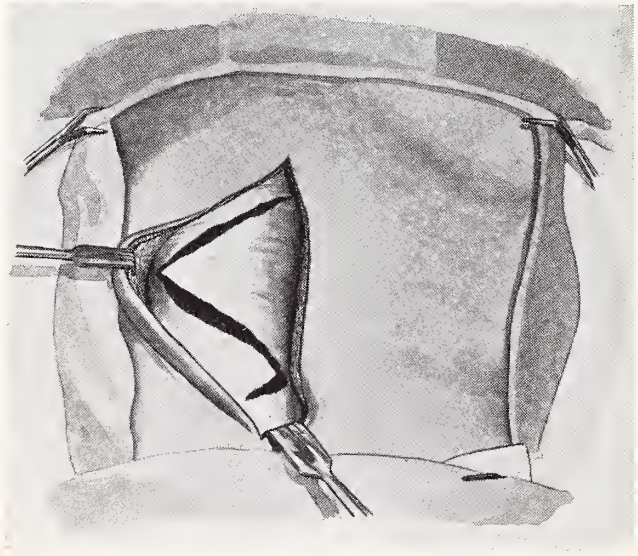


Figure 3. "Z" incision in anterior rectus sheath.

rupted or continuous sutures. In the series to be discussed, continuous chromic sutures were used in each of the fascial layers.

RESULTS

The incision was used in 50 consecutive abdominal cases, except that it was not used in place of a McBurney incision when the latter was indicated. Because this work has all been done in the past year, this report today is only a preliminary report. Not enough time has elapsed following the surgery for the passing of final judgment.

The series of 50 cases included a wide variety of surgical procedures—gastric surgery, the usual variations of biliary-tract surgery, operations for the relief of obstructions in both the large and small bowel, colon surgery including anterior colotomy and abdominoperineal resection, appendectomies and the common pelvic gynecologic procedures.

The youngest patient in the series was 15 years old, and the oldest (there were two of them) were each 87 years of age. Four patients were past 80 years of age, and 31 were over 50 years. Although as might be expected in a series of 50 cases, a variety of associated problems were seen, such as wound infection, persistent postoperative cough, cardiac disorders, dementia, and even duodenal-stump leakage, most of the cases were without complication.

The significance and durability of something new, however, does not depend upon the need for it, upon the concept or theory that is its basis, or upon details. Ultimately, significance depends upon results. By results alone, the "Z" incision will be judged, and on the basis of the primary characteristic of a good incision—good exposure—it can be said to have qualified very well. The exposure in each case at the time of surgery was graded as excellent, good or satisfactory. In no instance was the exposure graded as unsatisfactory, for in situations where greater exposure was found desirable, the incision was immediately lengthened by adding limbs to the "Z." This was necessary on a few occasions, and the facility with which this was accomplished was considered an advantage inherent in the incision. The exposure was graded as excellent in 29 cases; good in 5; and satisfactory in 2. The operative notes on the remainder of the cases contained no reference to the adequacy of the exposure, but it can be fairly presumed to have been adequate at the very least.

What, then, of its merits as regards the second requisite—a minimum of postoperative-wound problems, specifically evisceration and ventral hernia? The lapse of time following the actual surgery, as previously mentioned, has been too short as yet, in many cases, to permit a significant follow-up pertaining to ventral hernias, so we must be satisfied to judge the incision at this time on the basis of the incidence of wound evisceration. In the first 29 cases, there were no wound eviscerations. The thirtieth case eviscerated, and within the following month, there were three eviscerations—all in the daytime. Thereafter, the series of 50 cases was completed without an untoward event.

CONCLUSION

It now is time for me to modify three statements that I made earlier in the course of this talk. I indicated that this was a preliminary report. It is not. It is a final report. Second, I strongly implied that the "Z incision" (the "Crowley incision") would take its place with other distinguished incisions. It will not. There will be no such incision. Finally, I believed, and indeed I made it the thesis of my talk, that incisions can change, too. It now is apparent that incisions cannot change.

I have digressed enough. I started out to explain the meaning of my title "What Next?" My title is not, as it might seem, a reference to the glories of the past or to the brightness of future years. Rather, it is a convenient contraction of the full and complete title, "What in Hell Will Happen to Me Next?"

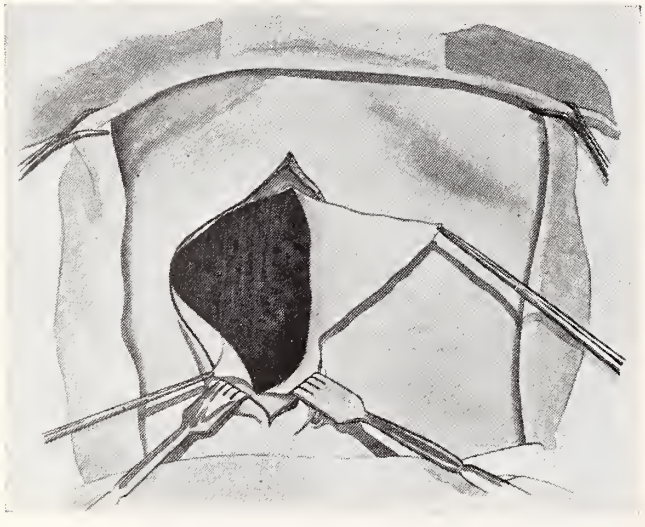


Figure 4. Separation of the anterior rectus sheath from the underlying rectus abdominis muscle.

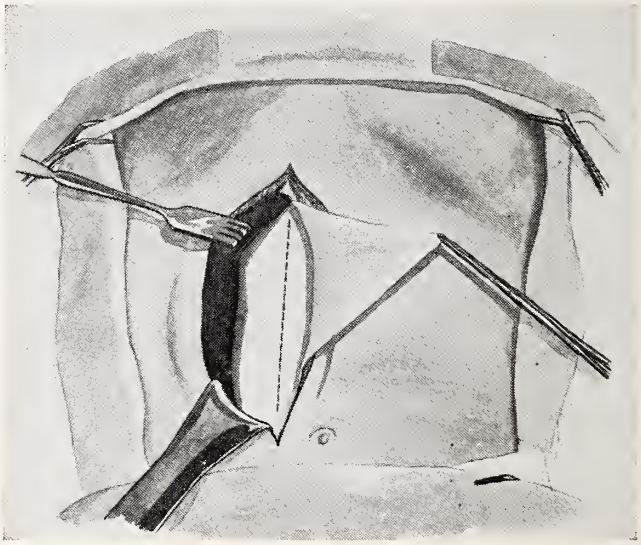


Figure 5. Retraction of rectus abdominis muscle laterally. The dotted line indicates the approximate location of the incision in the posterior rectus sheath and peritoneum.

State University of Iowa

College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

THE PATIENT was first admitted to University Hospitals three years before his final admission. At that first admission, he was 69 years of age and complained of difficulty in urination, which had been present for six weeks and was associated with urgency, dysuria and nocturia. He stated that he had also suffered cardiac decompensation for the previous three years, with swelling of his legs, occasional shortness of breath and some chest pain. He was taking digitalis and a diuretic, and was following a low-salt diet.

A normal intravenous pyelogram was obtained, but there was incomplete emptying of the bladder. He had a normal blood urea nitrogen and creatinine, as well as a normal blood hemoglobin level, white blood cell count and urinalysis. A barium enema showed diverticulosis. A chest roentgenogram was interpreted as showing considerable pulmonary emphysema, especially on the right, and a small heart. Healing fractures of the right 10th and 11th ribs posteriorly were also present. An electrocardiogram was interpreted as normal. It was the feeling of the urologists that he had only a slight enlargement of his prostate, and that most of his difficulty had resulted from medication. An internist consultant felt the patient was suffering from severe pulmonary emphysema, which accounted for his dyspnea, and that he had no heart disease. He recommended that the digitalis and diuretics be discontinued.

On his final admission, the patient stated that he had developed right lower quadrant abdominal pain and vomiting three days prior to entrance. Initially he had noted that a left inguinal hernia was "out," an occurrence that he said had been common during the previous year. He had reduced it without difficulty. Subsequently he had become aware of steady, continuous right lower quadrant pain associated with anorexia and nausea. In the ensuing 48 hours, he had felt quite ill and had vomited twice. An enema on the day before entrance had given slight relief. He had been considerably incapacitated by shortness of breath during the past two years, and had been taking corticosteroids daily with some benefit. In addition, he had been receiving the following medications: digitoxin (Crystodigin) 0.1 mg./day.; chlorothiazide (Diuril) 0.5 Gm./day; and a combination of oxytetracycline, sulfamethizole and analgesic (Urobiotic) four times daily.

On physical examination, he was an acutely ill, moderately dyspneic white male. His jugular veins did not empty until his trunk had been elevated 40°. He had an increased A-P diameter of the chest, with poor excursion. Both sides were hyperresonant, and breath sounds were distant. Rhonchi were heard on the right and over the bases. The blood pressure was 130/80 mm. Hg, and the pulse rate was 90/min. and regular. Muscle rigidity involved the right half of the abdomen, with a visible right upper quadrant bulge. Rebound tenderness and deep tenderness were present in the right flank and right upper quadrant. Bowel sounds were active and high-pitched. The patient had a reducible large left inguinal hernia. Roentgen evaluation of the abdomen provided no additional information. Chest roentgenograms indicated considerable pulmonary emphysema involving primarily the right lower lobe and what were interpreted as old granulomatous lesions of the upper lobes without definite evidence of activity. The blood hemoglobin level was 13.5 Gm./100 cc., and the white blood cell count was 14,700/cu. mm. The urine had a specific gravity of 1.025, a pH of 6.0, a trace of albumin but no sugar or blood on chemical examination, and 10-15 white blood cells per high-power field. An electrocardiogram was interpreted as showing right ventricular hypertrophy and digitalis effect.

Acute cholecystitis was considered the most likely diagnosis, and an exploratory laparotomy was performed. The surgeon reported the intra-abdominal findings were not dramatic. The liver showed considerable change, and its gross configuration was compatible with cardiac cirrhosis. Extensive diverticulosis of the colon was noted. A single, round, 6-7 mm. stone was impacted in the ampullary portion of the edematous gallbladder or proximal cystic duct, and this was removed. A cholecystostomy was performed. The bile subsequently cultured Streptococcus faecalis.

Postoperatively, the patient required Metaraminal bitartrate (Aramine) by drip to maintain the blood pressure. The first postoperative day, he showed some improvement, and the Aramine was discontinued. On the second postoperative day,

he was given digitalis and hydrocortisone intramuscularly. He then developed labored respirations. Intravenous aminophylline and oxygen did not produce any improvement. He later became cyanotic, and died 36 hours postoperatively.

CLINICAL DISCUSSION

Dr. R. F. Sheets, Internal Medicine: Miss Beck will present the case for the students.

Miss K. Beck, junior ward clerk: The patient had had a long history of pulmonary emphysema, and we believe he had developed cor pulmonale, with a moderate degree of heart failure, by the time of his second admission. In that state, he unfortunately developed acute cholecystitis, requiring a laparotomy and cholecystostomy, following which his blood pressure fell because of cardiac failure complicated by insufficient adrenocortical response to stress. On the second postoperative day, atelectasis, with progression of the heart failure, resulted in death.

The patient was diagnosed as having severe pulmonary emphysema on his first admission. That was substantiated on his final admission by the increased A-P diameter, poor excursion of the chest, hyperresonance, and distant breath sounds. The failure of the jugular vein to empty until his trunk had been elevated to 40°, his dyspnea, the EKG findings of right ventricular hypertrophy, and cardiac cirrhosis found at operation indicate he had cor pulmonale with a moderate degree of heart failure. In a 72-year-old man with heart failure, a postoperative fall of blood pressure would most likely be caused by progression of the failure, resulting in decreased cardiac output.

The patient had been taking corticosteroids. We do not know whether he took steroids to the day of his admission, and we are not told whether he was given a booster dose of corticosteroids before operation. If not, his postoperative hypotension could have been caused by a relative adrenocortical insufficiency from a diminished reactivity of the pituitary-adrenal system. Steroids over such a period—two years—could easily have caused inhibition of the pituitary ACTH production, and hence of the adrenal cortex.

The patient had rhonchi in both lungs, indicating the possibility of partial bronchial obstruction by tenacious mucus. The labored respirations of the second postoperative day were probably caused by the obstruction of a large bronchus or several bronchi by a mucous plug or plugs, with a subsequent cyanosis, the development of atelectasis, and further progression of heart failure.

Several other explanations of the patient's course must be considered, but the paucity of postoperative signs and laboratory data makes accurate evaluation difficult. Occasionally, a chronic partial thrombotic occlusion of the hepatic veins may occur as a part of congestive heart failure. This ultimately produces so-called cardiac cirrhosis, and complete occlusion can result in circulatory collapse. A complication of any operation may be hemorrhage, which can lower the blood pressure. A more specific complication of cholecystostomy may be bile peritonitis, which would cause shock. Acute pancreatitis may follow upper-abdominal surgery, especially that involving a gallbladder with gallstones. Pulmonary embolism is not uncommon in patients with histories of heart failure, but it rarely occurs on the second postoperative day, and the second postoperative day is also a little early for the development of pneumonia. Perforation of a colon diverticulum could cause peritonitis and shock.

On the basis of the information given, and taking into account statistical likelihood, we concluded the patient's final problems were due to cardiac failure, insufficient adrenocortical response, and atelectasis.

Dr. Sheets: Do you have any questions for Miss Beck? I might say that this patient did have adequate steroids before, during and after operation. Dr. Abboud will discuss the protocol for the staff.

Dr. F. M. Abboud, Internal Medicine: I want to reemphasize the most salient features of this protocol, and to see what diagnosis can be reached from the positive findings alone. Then, in a more general fashion, I'd like to discuss four or five medical considerations related to this case.

The salient positive findings we are sure this patient had are advanced pulmonary emphysema, right ventricular hypertrophy, and acute cor pulmonale. He arrived with an "acute abdomen," and died in postoperative shock. Acute cor pulmonale could develop in a patient with pulmonary emphysema after two important complications. The first is pulmonary infection. The pulmonary infection may be clinically detectable or may escape clinical detection. We should not expect, in general, to find the classic evidence of consolidation, for example, in a patient with pulmonary emphysema, and yet the pulmonary infection could be severe enough to cause hypoxia and to raise pulmonary-artery pressure enough to result in right ventricular failure. If the infection were in the right lower lobe, the patient could have reflex pain and rigidity in the right hemi-abdominal musculature, but I should not expect the infection in the right lower lobe to produce rebound tenderness. Now if the acute right ventricular failure caused a sudden engorgement of the liver, distention of the hepatic capsule could result in rebound tenderness in the right upper quadrant. So pulmonary emphysema, pulmonary infection and acute right ventricular failure could present the picture of acute abdomen in this man, and his postoperative shock could have been caused by a progression of heart failure, followed by death.

The second complication that could cause acute pulmonary hypertension in a patient with emphysema is pulmonary infarction. I favor this com-

plication just on a statistical basis. Currently we make an accurate diagnosis of pulmonary embolism, with or without infarction, in 20 to 50 per cent of cases, as compared to autopsy findings. Half the patients in congestive heart failure have pulmonary embolism at one stage or another during their courses. There are a couple of triads that should make us suspect pulmonary embolism. They may not be applicable to this particular patient, but I shall mention them anyway. The first is the clinical triad of tachycardia, digitalis intoxication and edema that fails to respond to diuretic therapy. The second is a chemical triad of elevated serum bilirubin, elevated serum lactic dehydrogenase, and a normal serum glutamic oxalacetic transaminase. None of these laboratory findings has been reported in this patient. He did not have tachycardia; he did not appear to have digitalis intoxication; he may have had edema that was not responding to diuretic therapy.

In any event, I still say that the diagnosis of pulmonary embolism is the best possibility on a statistical basis. Very often, pulmonary embolism occurs without any of the classical findings one would expect. We may not hear the pleural rub. The patients do not necessarily complain of any pleuritic type of chest pain, and do not necessarily have hemoptysis. The pulmonary hypertension, the acute right ventricular failure, the distention of the liver, and the shock could all be related to pulmonary embolism or infarction. This would be the logical diagnosis I would reach from the positive findings available.

The first medical consideration I should like to discuss in this case is the problem of hypokalemia. The report suggests the patient may have had that condition. He had been on steroids and diuretic therapy. In general, steroids alone would not cause hypokalemia, particularly if a low-sodium diet were given. Steroids would help, or promote the secretion of potassium and the retention of sodium, but in order for the loss of potassium to be critical —in order for the patient on steroids to develop hypokalemia—enough sodium should reach the distal renal tubules to be exchanged for potassium. One has to absorb sodium in order to secrete potassium. If one is on a low-sodium diet and the sodium which reaches the distal tubules is insufficient for exchange with significant amounts of potassium, hypokalemia will not develop.

There are two practical points connected with this concept. Patients with congestive heart failure and patients with anasarca have a great deal of aldosterone. They have what is called secondary hyperaldosteronism; yet the problem of hypokalemia is not critical in them, probably because they are on a low-salt diet and have a large extracellular fluid space. A great deal of sodium can be segregated in that space, so that insufficient amounts reach the tubules to be exchanged for potassium. On the other hand, patients with primary hyperaldosteronism present with severe hypokalemia. When diuretics are given to a patient on steroids, renal excretion of sodium is promoted, this sodium becomes available for exchange with potassium, and the increased secretion of potassium leads to hypokalemia. The combination of diuretic therapy and steroids can therefore be dangerous. One should worry about it particularly in cardiac patients on digitalis, because of the possibility of digitalis intoxication.

Another reason why this patient could have had hypokalemia is his excessive vomiting. I call it excessive because he hadn't been eating but had been vomiting for two days prior to admission. The metabolic alkalosis that develops after excessive vomiting favors the shift of potassium from the extracellular fluid space to the intracellular. Vomiting of gastrointestinal secretions which contain much more potassium than other extracellular fluids favors the hypokalemia.

Now we move from the hypokalemia to a disturbance of acid/base balance that could have occurred postoperatively. The patient had considerable pulmonary emphysema. We know these people get into trouble primarily from respiratory acidosis and hypoventilation. Postoperatively, I suspect, he had some depression of his respiratory center, poor ventilation, and an ideal set-up for the development of respiratory acidosis. What would happen to the pulmonary-artery pressure in this situation? It would tend to rise with hypoxia and respiratory acidosis, and could precipitate his failure or enhance it. His pO_2 would fall to about 70 per cent; his pCO_2, which is a major problem in respiratory acidosis, would rise; and his partial pressure of CO_2 could go up to 60-70 mm. Hg. Generally, however, patients with respiratory acidosis do not have the labored respirations that occurred in this patient. They tend to be somnolent and cyanotic, and when given oxygen, they improve as regards color, but they lapse into deeper coma, so that the pO_2 rises 100 per cent, the pCO_2 also rises, and they "die pink." I am not sure whether respiratory acidosis was a problem in this case, even in the terminal stage, because the patient had labored respirations and was cyanotic in spite of the administration of oxygen. Pulmonary infarction or atelectasis would explain this sequence of events better than respiratory acidosis.

The problem of steroid therapy was touched upon. There is no doubt that steroid therapy represents a definite threat, especially when the patient is faced with a medical or surgical emergency. We should keep this fact constantly in mind, and we should treat such patients in anticipation of adrenal crises. As if they had adrenal insufficiency, they should be treated with the appropriate intramuscular or intravenous hydrocortisone prior, during and after operation.

One other problem that I should like to discuss

briefly in connection with this patient is the pathophysiology of pulmonary hypertension. The normal pulmonary artery pressure is about 30/10 mm. Hg. The pulmonary vascular bed is fantastic in that there is a great deal of flow into it without a rise in pressure, and this is fortunate since the right ventricle is a volume pump. It cannot work against high pressures. Now if I had a catheter in your pulmonary artery and exercised you so that I doubled your cardiac output or even tripled it, I'd find that the pulmonary-artery pressure had changed very little. If I had a catheter and inflated a balloon in one of your pulmonary arteries so that all of the blood flow went into one lung, pulmonary-artery pressure would not rise very much. Now, if you had any sort of obliterative pulmonary disease—pulmonary emphysema, sarcoidosis, silicosis, etc.—then you would be in trouble, and exercise would then cause a tremendous rise in your pulmonary-artery pressure.

In the patient under discussion, the acute hypoxia plus the chronic pulmonary disease could have caused an increase in pulmonary vascular resistance and acute right ventricular failure. Such patients can frequently go into and out of failure. This patient had been on digitalis for two years. Then someone came around and said he didn't seem to have heart failure and that most of his problem had resulted from pulmonary emphysema. That is one of the most difficult differentiations one can make—how much of the problem was due to pulmonary emphysema and how much was due to heart failure. At any stage during the last three or four years, he could have gone into heart failure from pulmonary infection and hypoxia, with a rise in pulmonary pressure and cor pulmonale. When treated with antibiotics, he recovered from the hypoxia, his pulmonary-artery pressure fell, and he was out of failure.

We talked about the obliterative pulmonary diseases that could cause pulmonary problems such as obesity and kyphoscoliosis that can cause pulmonary hypertension. How do these produce that result? It's an interesting question and is open to speculation. Such patients have alveolar hypoventilation; they become hypoxic very readily; and the hypoxia can cause a rise in pulmonary pressure and heart failure. Another cause of pulmonary hypertension would be a left-to-right cardiac shunt, at any level, increasing pulmonary blood flow. With an excessive pulmonary blood flow over a period of years, pulmonary hypertension can develop, and eventually a reversal of the shunt to right-to-left could occur, giving rise to the Eisenmenger complex and cyanosis. Other causes of pulmonary hypertension are, of course, left-sided failure, mitral stenosis, any lesion that would increase the pressure from the left side of the heart to the lung and over to the right side, myxoma of the left atrium, and thrombosis of the pulmonary veins. With the problems that arise on the "left side," the main presenting symptoms would be orthopnea and paroxysmal nocturnal dyspnea. On the other hand, patients who have pulmonary hypertension from primary vascular disease of the lungs do not have orthopnea unless they have had an associated left-sided ventricular disease.

Finally, a word about the venous pressure. The implication that one derives from the statement, "When he was raised 40°, his neck veins emptied," is that he had an increased venous pressure. Now I'd like to go to the blackboard, for it is simpler to make my point by means of a diagram. If we were to consider the jugular vein as a blood manometer sticking into the right atrium, this is the level of the clavicle, and this the level of the jaw, the upper limit of normal venous pressure being 10 cm. of water. A pressure of 10 cm. H_2O or approximately 10 cm. of blood congests the veins up to a level just below the clavicle when the subject is upright. If the subject is recumbent, the veins are congested to the angle of the jaw. If the body were elevated, the congestion would not clear the jugular vein until an angle of about 40° had been reached. This does not necessarily mean that the patient had an increased venous pressure. We shouldn't necessarily rule out the diagnosis of heart failure just on the basis of a normal venous pressure. We see patients with left ventricular failure and normal systemic venous pressure. They have a high pulmonary-vein pressure. Even patients with "right ventricular failure" can have a borderline venous pressure.

There are two maneuvers I would suggest whenever one finds a borderline venous pressure in a patient one thinks has heart failure. The first one is: press on the liver. In general, pressure on the liver should not cause a rise in venous pressure. If one sees some congestion of the neck veins just above the clavicle, he should press on the liver. If a rise of about 2 cm. occurs in the level of congestion in the vein, then he can feel quite confident that the patient has an abnormal venous pressure. This would be compatible with the presence of heart failure. The second maneuver that I suggest is to have the patient do a mild exercise. With exercise, there is a small transient rise in venous pressure if the patient is not in failure. The rise in venous pressure lasts less than a minute. If the patient is in failure, venous pressure increases significantly and is maintained for longer than one minute.

Getting back to the case at hand, and in summary, I think the patient had advanced pulmonary emphysema. If he suffered pulmonary infarctions that threw him into acute right-sided failure, sudden distention of the hepatic capsule could have caused the findings of "acute abdomen." Adrenal crisis could explain the shock, but it was ruled out. I should say that extension of his pulmonary emboli after operation, with progressive heart failure, caused his death.

Dr. Sheets: Do you have any questions for Dr. Abboud?

Dr. G. N. Bedell, Internal Medicine: I don't have a question for Dr. Abboud, but I do have one for the surgeon. Why was this man operated upon? The clinical diagnosis was acute cholecystitis, and I didn't think that was considered an indication for operation in the acute stage.

Dr. R. T. Tidrick, Surgery: I asked myself that same question a short time afterward. It's true, we don't usually operate upon patients with ordinary early acute cholecystitis. Whether we should is a moot question, and under considerable debate. There are numerous groups in the country who feel very strongly that all patients with acute cholecystitis should have emergency operations if they are seen within the first 24 or 48 hours of the process. The mortality and morbidity rates are more favorable following immediate surgery than in cases that are managed by the so-called conservative, non-operative or expectant treatment, in whom operations are performed only if there are alarming signs indicating gangrene, perforation or peritonitis. A very capable surgeon in this state, a man associated with a large private clinic, presented a paper on this subject at a meeting of the Johnson County Medical Society a year ago. Some of you may remember his presentation. He personally has had a large number of acute cholecystitis patients whom he has treated on an emergency basis with zero mortality and with a commendably low morbidity. A more aggressive treatment of acute cholecystitis is the custom likewise in a number of parts of the country, especially in metropolitan centers where the distance between patient and physician or surgeon may be short and time short.

However, I believe that more often than not, our patients come in on the third or even the fourth day of their illnesses. Stabilization is more likely to be in effect. After reviewing the protocol, I think this patient might have ridden out his crisis. Cross-sectionally, our patients represent an older age group, and I believe that our figures will justify our rather conservative approach to this problem.

Now why did we depart from our usual practice in this instance? Well, we were obviously misled in the interpretation of this man's physical findings and his picture, as the pathologist will bring out. However, I think that the pathologist's findings will also show that, as is so often the case, we were dealing with two unrelated processes. These came to be additive in terms of their contributions to the clinical picture, in which we erroneously interpreted the acute intra-abdominal process as being predominant.

Dr. Sheets: Dr. Miller, will you tell us about the pathologic findings?

Dr. H. P. Miller, Jr., Pathology: The major autopsy findings were in the thoracic cavity. The right main pulmonary artery was completely occluded by a thrombus which extended deep into the branches of this artery. The deeper portions seemed old and well organized, but the proximal portion was a fresh-appearing thrombus which looked as if it had accrued upon the older material. What was described as a small embolus was found in an artery leading to the left lower lobe. We found severe generalized pulmonary emphysema, but no infarction, consolidation or focal lesions of the lung parenchyma. There were a few scattered adhesions and fibrosis of the pleura.

Microscopically, there was considerable pulmonary vascular sclerosis of small arteries and arterioles. Thrombi in various stages of organization were found scattered in the medium to small arteries.

The heart had increased in weight to 400 Gm. The hypertrophy was predominantly of the right ventricle, and there was also a marked dilatation. There was no fibrosis or infarction of the myocardium. The coronary arteries had patchy atheromatous plaques without appreciable luminal narrowing. The heart chambers contained postmortem clots. No evidence of thrombosis, emboli or inflammation was found in the vena cavae, portal veins, pelvic veins or veins of the lower extremities.

There was a right subcostal incision, through which passed the cholecystostomy tube and a Penrose drain. The gallbladder was small, with a wall of medium thickness showing minimal evidence of inflammation. The extrahepatic biliary ducts were patent, were of normal caliber throughout, and contained no stones. The liver was not increased in weight or grossly congested. Within the abdomen there were no other findings that might account for the patient's symptoms. Additional findings that could be listed at autopsy included diverticulosis of the descending colon, a pedunculated polyp in the sigmoid colon, arteriolar nephrosclerosis, left inguinal hernia, mild adrenal cortical atrophy, and slight enlargement of the prostate.

I shall now show colored slides of the pathology. The first slide is a microscopic cross-section that was taken through the largest part of the thrombus in the main right pulmonary artery. There are no gross photographs to show this thrombus. As you can see, it is about 2 cm. in diameter. There are several clefts in the section which I believe are artifacts, and therefore this was completely occlusive. At this power you can also see some lines of Zahn formed by the deposition of platelets and fibrin.

This is a higher-power view to show the formation of this material. I believe it probably is of rather recent formation, and the picture was probably taken through the fresh material which was most proximal in the arteries.

Another high-power view of the thrombus shows

organization proceeding at the periphery. There are scattered capillaries and also scattered fibroblasts, and the blue portion represents the early phases of organization. For comparison, the following slide is of a normal adult lung. Note the size of the alveoli. Compare this with a representative slide of the patient's lung, showing the severe pulmonary emphysema.

The next slide is a pulmonary artery in a normal young adult, and will give you an idea of the size of the pulmonary arterial wall. There is a thin muscular coat and an almost indistinguishable intimal layer.

Here on this slide are small pulmonary arteries from the patient, showing the extensive vascular sclerosis that is frequently associated with pulmonary emphysema. The wall is greatly thickened, the muscular media is thickened and hyperplastic, and the intimal layer is also greatly proliferated and thickened. This condition was quite generalized. One can see a medium to small artery with material in its lumen. This is thrombotic material, or possibly embolic, I'm uncertain as to which. It is irregular and shows some early organization.

A somewhat higher-power view shows that organization was starting. This material is covered in some areas by endothelium with ingrowing capillaries and ingrowing fibroblasts, and the picture shows clearly the covering of endothelium and fibroblasts. This type of reaction occurs very quickly over thrombotic or embolic material in vessels.

I should like to say a few words about primary thrombosis in the major or main pulmonary arteries, particularly in regard to the approach on postmortem examination. Primary thrombosis in the main pulmonary arteries is an uncommon condition that is thought to occur in only a small fraction of autopsy cases. In one series of 35,000 autopsies, it was present as a cause of death in .02 per cent.[1] In contrast, pulmonary embolism occurred in 4.2 per cent in this series, and frequently is reported as having occurred in a higher percentage. Whether thrombosis is truly primary or has been initiated by embolic occlusion, however, frequently proves difficult or impossible to determine at autopsy. At times, gross examination of the occlusive mass in the pulmonary arteries may provide a positive answer, if a more or less classical coiled embolus can be found loosely embedded in fresh, propagated thrombus. With time, organization and degenerative changes will make this differentiation difficult. Also if the embolus or emboli are small, they may be overshadowed by extensive proximal and distal thrombosis. I don't think that a definite conclusion can be drawn from the gross appearance in this particular case.

Microscopic examination in certain cases may provide good evidence of primary thrombosis. Ulceration of atheromatous plaques in the pulmonary arteries can produce foci for thrombosis. Sections through such areas should show growth of thrombus, with lines of fibrin and platelet deposition parallel to the arterial wall, and would strongly suggest *in situ* thrombosis. Embolic material would be unlikely to show such a relationship to the arterial wall, the wall would not be expected to show disease, and the lines of material deposition would be haphazard. In the present case, no arterial sclerotic changes were noted in the pulmonary arteries grossly, although on microscope examination some intimal thickening was found in some medium-sized arteries.

In regard to occlusive material in the small pulmonary arteries, I know of no reliable criterion to distinguish emboli from thrombosis with certainty. Local pathology in the lungs, such as carcinoma, tuberculosis, pneumoconiosis and emphysema, may be regarded as predisposing to primary thrombosis. Also, more generalized conditions such as cardiac failure, polycythemia and altered coagulability of the blood may be important. Perhaps cardiac failure and emphysema were significant in this case.

Obviously, finding a source of emboli is important. In this case, none was found, though the leg veins were examined by milking them down with the legs elevated. This is the usual procedure, but a complete dissection would be more adequate. Unfortunately, however, a complete dissection may not be entirely satisfactory, since thrombi which may have been present could pass on to the lungs in their entirety, or thrombosis which may be found may not have embolized. Finally, the history and clinical findings may be helpful. Thrombophlebitis and pulmonary embolism or infarction, of course, would seem to indicate that the thrombosis was secondary to embolism. On the other hand, a lack of these findings would not rule out the possibility. Occult phlebothrombosis with pulmonary embolism occurs in ambulatory patients and has been well documented.[2] Pulmonary embolism may also occur without clinical recognition. Perhaps such a thing took place in this patient, and the symptoms which he may have had, such as dyspnea and chest pain, were overshadowed.

After taking all of the available information into consideration, I could not come to any definite conclusion as to whether this had been a primary thrombosis or had resulted from previous embolism. I should attribute the death primarily to right heart failure, precipitated by mechanical occlusion in the pulmonary arteries.

Dr. Sheets: Are there any questions for Dr. Miller?

Dr. Paul M. Seebohm, Internal Medicine: What did the bronchial tree look like?

Dr. Miller: There was considerable mucus in the bronchi. Otherwise, there was no inflammation or other significant findings.

Dr. W. B. Bean, Internal Medicine: Did you say this man's liver was not distended?

Dr. Miller: Grossly, it was not. In view of right-sided heart failure, however, one would expect it.

Dr. Tidrick: What did the liver weigh?

Dr. Miller: The liver weighed 1,300 Gm., which is within normal limits. In fact, it is a little low. I do have two slides of the liver to show you. This is a trichrome-stained section of the liver. I could not find cardiac cirrhosis. The sinusoids are somewhat distended, but the central veins show no evidence of the increased fibrosis that one would expect to find in cardiac cirrhosis. This is a higher-power view to show the central vein and the liver sinusoids, which are dilated centrally but contained little blood at that time.

Dr. Henry E. Hamilton, Internal Medicine: In reference to Dr. Bean's question, I'd like to point out that the liver *was* distended. The microscopic studies confirm this. Is it possible that some of the blood had drained out, and therefore that it didn't weigh as much as it had during life?

Dr. Miller: Yes, it's possible that part of the weight was lost when the liver was removed. However, I am uncertain of the amount of reduction.

Dr. D. S. Longnecker, Pathology: I take exception to the conclusion that the liver was distended on the basis of the vascular changes shown in the photomicrograph. The sinusoids appear large, it is true, but this is because of atrophy of the liver cells in the centrolobular region. The increase in size of the sinusoids is accompanied by a decrease in the space occupied by the liver cells, and I think overall that the liver need not have been distended in the sense of being grossly enlarged. These changes reflect chronic congestion.

Dr. Abboud: In response, again, to Dr. Bean's question, I should say that just before death this man could have had a redistribution of blood away from his liver which might have been engorged on admission, causing distention of his hepatic capsule. This would explain the acute abdominal signs, and before death, as he went into shock, there could have been a redistribution of blood volume from the liver to some other vascular bed.

I have a question for Dr. Miller regarding the presence of pulmonary emboli and the presence or absence of pulmonary infarction. Why does pulmonary infarction develop in some cases of pulmonary emboli and not in others? Is the size of the embolus important, or why, in your experience, has this occurred?

Dr. Miller: The usual reason is the influence of prior lung disease. Infarction is much more common if there has been prior lung disease. I think one might expect infarction in this case, with the emphysema that was present. Also heart failure predisposes to infarction. Of course, the bronchial arteries must supply adequate blood to avoid infarction.

Dr. Jack M. Layton, Pathology: Infarction of the lung is uncommon unless the veins are involved, too. Since no venous involvement was demonstrated, infarction would have been surprising.

Dr. Bean: Clinically, infarction occurs much more commonly in the face of congestive failure with left ventricular failure and pulmonary edema than it does in primary lung disease.

Dr. Sheets: As things developed at the bedside, the clinicians did not have all the information that is available now. Let's see what Dr. Behlke can tell us from the roentgenograms.

Dr. F. M. Behlke, Radiology: This was the patient's final-admission postero-anterior chest roentgen, and it was interpreted as showing pulmonary emphysema, with some bilateral upper-lobe infiltration that was thought to be old. The heart was felt to be within normal limits as to size and configuration on this single projection. The pulmonary emphysema was regarded as more pronounced in the right lower lung field. As it turned out, this was the only roentgenogram we had during the initial consultation when this man presented with his acute symptomatology. However, after his demise and a search of the records, it was found that he had had a previous admission, and that his roentgenograms had been filed under a different number at that time. They were retrieved.

On this chest roentgenogram taken three years earlier, note the appearance of the right pulmonary artery. It seems normal in size. Keeping that image in mind, let's look again at his final-admission chest roentgenogram. Notice that the pulmonary artery is considerably greater in size due to the embolus. We estimated this to be about twice the size that it had been in the earlier film, and in the later film there was a hyperlucency of the right lower lung that seems, in retrospect, to have been due to avascularity.

There are two points that I wish to make here. One is that a review of past roentgens in any problem case is frequently invaluable. Whether it's a chest problem or one centered around the intestinal tract, a review of past films can be very helpful in providing pertinent information. The second point that I think is rather important and which I wish to emphasize is that a second look at a problem case is frequently valuable. If the referring physician goes over the roentgenograms with the radiologist and provides specific information from the history, physical findings and laboratory reports, more information can be extracted from the roentgenograms for the patient's benefit.

Dr. Bean: Would that degree of enlargement in the pulmonary artery enable you to say flatly that you thought he had a pulmonary thrombosis or embolus?

Dr. Behlke: In retrospect, it's easy to say, "Yes, this is what I would have said." Initially, however, if we had just the one roentgenogram when this man presented and when we held our surgical consultation, I think it's conceivable that we might have overlooked it. Yet if we had had the previous

chest studies in serial presentation, I think we would have been alerted to this significant abnormality and would have suspected an embolic phenomenon to account for it.

Dr. Tidrick: Although it may not be applicable to patients such as this old man who was pretty depleted, we must recognize that some patients with pulmonary thrombosis *in situ* can be salvaged. A paper appeared recently by one of our recent residents and associates here, Dr. Richard Sautter, of Marshfield, Wisconsin, in the NEW ENGLAND MEDICAL JOURNAL, about a somewhat comparable problem, but in a much younger patient, 50 years of age. With contrast angiographic studies preoperatively, and with a plain roentgenogram that appeared much like this one, it was possible by means of a heat exchanger and extracorporeal circulation to milk out, suck out and even extract a handful of clot, bit by bit, with stone-extracting forceps. Logically, then, since that man's episode had been rather sudden in onset, his inferior vena cava was ligated, and he made an essentially uneventful recovery.

Dr. J. L. Ehrenhaft, Surgery: I don't think that surgical intervention and removal of the thrombus in the pulmonary tree could have changed the outcome in this patient. However, there are a group of patients in whom emergency pulmonary embolectomy should be carried out as soon as the diagnosis of extensive pulmonary embolus or thrombosis has been made. I should like to point out that accurate diagnosis of the location and extent of the pulmonary arterial embolization can be obtained by means of preoperative pulmonary arterial angiograms. In some patients, this can be carried out just prior to the emergency pulmonary embolectomy. This procedure, however, will not differentiate between pulmonary embolization and thrombosis of the pulmonary arterial tree *in situ*.

Dr. W. E. Connor, Internal Medicine: This patient had received adrenal corticoids before he developed thrombotic disease. In this connection it might be worth mentioning that there is a clinical association between prolonged corticoid therapy and an enhanced propensity toward thrombosis. This has been pointed out a number of times in the medical literature. It has been seen in our hospital on occasion. Furthermore, patients with Cushing's disease are known also to be particularly prone to thrombotic disorders. At least one blood coagulation system is affected by adrenal corticoids. Adrenal corticoids reduce the ability of the blood to lyse fibrin clots.

Dr. Tidrick: We haven't really answered Dr. Bean's question about the possibility of liver distention, with capsule stretching, and the picture of right upper abdominal quadrant pain and tenderness. Was this liver distended or not? I wonder whether Dr. Miller would comment on the appearance of the capsule. This is still confusing.

Dr. Miller: From the protocol, it seems that no particular abnormality of the liver was described grossly, but as regards the problem of right lower abdominal pain, there is one point I might add. While reviewing some articles on the subject, I ran across one entitled "Abdominal Pain in Pulmonary Thrombosis," written in 1943 by Dr. Middleton in ANNALS OF INTERNAL MEDICINE,[3] in which the author wanted to emphasize this particular symptom. He felt the pain was mediated through fibers of the vagus nerve. Fibers of these nerves come from both the main pulmonary arteries and from the gut, and can produce a referred type of pain. Perhaps this was the significance here. As for a distention of the liver capsule, though, I can't give you any positive information one way or the other.

Dr. Hamilton: I'd like to comment further on this point. We see patients who develop very large, tender livers, easily detected clinically, during an episode of right-sided heart failure. For example, Dr. Ehrenhaft and I cared for a lady who was thought to have an acute cholecystitis because of severe recurrent right upper quadrant abdominal pain. She was in heart failure as a result of mitral stenosis. Her liver was enlarged to about two handbreadths. After 24 hours of treatment for cardiac failure, her liver size receded to about one handbreadth. There is no doubt there that the liver became tremendously distended and that it then receded rapidly in size. A mitral valvulotomy prevented further recurrence of acute abdominal pain.

Dr. Sheets: I should like to emphasize again that disease in the chest sometimes accounts for symptoms and signs such as were found in this patient's abdomen. Dr. Tidrick has infrequently embarrassed us on medicine by diagnosing lobar pneumonia in patients who we thought had surgical abdomens. In going through this man's record and trying to put it together and explain the findings, the only point I can come up with is that this man's severe pulmonary emphysema was overemphasized on his last admission. We ascribed the pulmonary symptoms and signs to pulmonary emphysema without taking a second look and asking whether a concomitant disease could have accounted for them. That intellectual commitment left the abdominal signs and symptoms as indicating a primary disease in the abdomen rather than in the lungs. If there had been a hint somewhere along the way that something else was going on which could not be explained by this man's long-standing emphysema, I think the situation would have been clearer.

SUMMARY OF NECROPSY FINDINGS

Massive pulmonary thrombosis, with complete occlusion of the right main pulmonary artery
Multiple small pulmonary thrombi, both lungs
Pulmonary emphysema, severe
Pulmonary vascular sclerosis

Cardiac hypertrophy, predominantly right-sided, 400 Gm.
Dilatation, right ventricle of heart
Passive congestion of liver, with early central necrosis
Cholecystostomy, postoperative status
Adenomatous polyp, sigmoid colon
Esophagitis, acute, mild
Arteriolar nephrosclerosis
Arteriosclerosis, generalized
Inguinal hernia, left

STUDENTS' DIAGNOSES

Pulmonary emphysema
Cardiac failure
Adreno-cortical failure
Atelectasis

DR. ABBOUD'S DIAGNOSES

Pulmonary emphysema
Pulmonary embolus
Right ventricular hypertrophy
Progressive cardiac failure

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Surgical Treatment of Hydrocephalus

A "success" rate of approximately 70 per cent has been reported in the surgical treatment of hydrocephalus (commonly called "water on the brain") in infants, according to a State University of Iowa physician. Dr. William Bell, assistant professor of pediatrics and neurology, described various advances in diagnosis and treatment of the condition for more than 40 physicians from Iowa, Illinois and Missouri, who attended a Pediatrics Postgraduate Conference September 16 and 17 in Iowa City.

Pressure often may be relieved through a vascular shunt operation in which a tube is inserted to drain the excess liquid harmlessly to other parts of the body, a surgical technic which Dr. Bell said has brought "a tremendous advancement in the treatment of infantile hydrocephalus."

A child with early hydrocephalus whose disorder undergoes spontaneous arrest before he is first seen by a doctor can be safely watched without surgery, Dr. Bell said. "However, acceptable arrest means that the head size grows no further, at least until the rest of the body and linear length catch up. Continued growth of the hydrocephalic head at the rate normally expected for age cannot usually be accepted as arrested."

In infants with hydrocephalus, there is considerable variation in the time of appearance and the degree of clinical manifestations, according to Dr. Bell. Abnormal head enlargement may be evident at the time of birth; or, more frequently, the child may be several weeks or even months old before any abnormality is noted. Frequently parents do not immediately recognize that their child's head growth is abnormal. Dr. Bell explained that various types of abnormal eye movements may occur in the infant with hydrocephalus, and with long-standing hydrocephalus, loss of vision may develop.

"Except for signs pertaining directly to the head, the most characteristic feature of a hydrocephalic baby is irritability," he said. "This is commonly associated with vomiting, though this latter need not be present. The so-called cerebral cry, having a high-pitched, shrill quality, may be noted."

A dilemma frequently encountered, he said, concerns the child a few months old whose head is only slightly large for either linear length or chronological age. Many such babies with marginal head measurements turn out to have no disease whatever, but are manifesting only a familial trait, that of having a slightly large, but normal head. A wise approach to this situation, he explained, is for the physician to obtain skull x-rays on the child's initial visit, and then to take the child's head measurements at weekly intervals. If it then becomes apparent that the rate of head growth is clearly abnormal, additional studies are indicated. The normal infant's head should not grow more than 2.5 centimeters (about one inch) in each of the first two months, and considerably less in each of the months that follow.

Dr. Bell said that premature infants may show growth rates of head size which seem disproportionately rapid as compared to those of full-term babies. Thus, the appearance of certain small premature infants may erroneously suggest hydrocephalus because of the disproportion of the head size to chest or total body size.



COMMUNITY HEALTH WEEK OCTOBER 18-24

Preparations should be started throughout Iowa for the observance of the second annual Community Health Week, October 18-24. The AMA is sponsoring such programs to call public attention to the health and medical facilities that exist in every area.

The roles of the State Department of Health and of local health departments, where they exist, in protecting water supplies and in assuring proper waste disposal and conformity with hygienic practices in the distribution and dispensing of food have been taken too much for granted. The control of communicable diseases, the investigation of epidemics, and the determining of sources of infection are other little-recognized functions of these agencies. In places where local public health services should be established, or where they should be improved, this occasion will provide an opportunity for calling community needs to the attention of all citizens.

The development of modern hospitals deserves community-wide recognition. As medicine has progressed, hospitals have provided the necessary laboratory, diagnostic and treatment facilities. Attention should be directed to the importance of hospitals in community life.

The designation of this special week gives the medical profession a propitious time for reminding people of the miracles that have been achieved—the adding of 10 years to life expectancy within the past 25 years; the efficacy of immunizations; the benefits that accrue from regular health appraisals; and the rewards that come from good health practices.

The third week in October will be a fitting time to acquaint all Iowans with the varied activities of the S.U.I. College of Medicine, and to show them how very important it is to them. Training young men to be physicians, though the most important part of its work, is only one of the contributions it makes. The general public is less familiar with the research it carries on in the basic sciences and clinical medicine, and with its postgraduate programs designed to keep practicing physicians abreast of the advances in medicine.

Community Health Week should prompt every city, county and town to take stock of its present health facilities, to make sure that they meet modern standards, and to anticipate future needs.

A FRIGHTENING MORAL CRISIS

In 1961 the Council of the British Medical Association appointed a committee to investigate venereal disease among English young people. The committee was composed of representatives of the medical profession, teachers, nurses, clergymen and social workers, and the investigation covered the period from May, 1961, to January, 1964. Oral and written evidence was collected from individuals in close contact with young people. The committee's report was published early in March of this year, and LANCET devoted the leading article in one of its March issues to it.*

According to the report, sexually transmitted disease in Britain increased 73.5 per cent, and venereal disease (legally defined as including syphilis, gonorrhea and soft chancre) rose by 47.3 per cent during the period 1951-1962. During the same time, the population increased by only 6.5 per cent. The figures included only the patients who attended venereal disease clinics, and therefore they indicate no more than a part of the problem.

The report states that in 1961, young people between the ages of 15 and 19 years were responsible for approximately 6 per cent of the gonorrhea in men and 26 per cent in women. The figures for 1962 were just about the same as for the previous year. It was found that immigrants were responsible for approximately one-half of the increase in gonorrhea since 1952, but that venereal disease among immigrants was confined to the big cities. Although young immigrants had contributed to the problem, the evidence suggested that they had not been solely or even principally responsible for the rise in venereal disease.

Between 1955 and 1961, over 37,000 illegitimate children were born in England and Wales each year, and the proportion of illegitimate to the total of live births throughout the country rose from 4.6 to 6.6 per cent, and in London alone it rose from 7.7 to 14.1 per cent. It was found that in 1961, girls 16 years of age and under bore 5.1 per cent of all illegitimate infants. According to the registrar, two out of three babies born to girls under 20 years of age, in 1961, had been conceived out of wedlock, and the total number of such births increased from just under 20,000 in 1948, to more than 41,000 in 1961.

As a result of the investigation, the BMA committee was convinced that there is more promiscuity today than formerly. This change was attributed to a radically altered attitude toward sexual morality and, indeed, to morality in general. Some of the witnesses thought this was a consequence of the two world wars; others felt that "the bomb" was responsible. Evidence indicated that many parents are completely unable to understand the emotional and intellectual needs of their chil-

* Venereal disease and young people. LANCET, 1:594-596, (Mar. 14) 1964.

dren, and that this lack of understanding has provoked antagonisms towards parents, teachers and adults in general.

The report pointed out that adolescent girls today reject the old-fashioned concept of dual standards of behavior, and are unwilling to accept what they consider a subordinate role in society. Women as well as men have come to regard sexual experience before marriage as a conventional necessity, and the pressures to conform to the expected behavior are extremely strong. The modern girl enjoys a freedom in her relationships that she is loathe to relinquish. The difficulty is that young women find themselves in situations that would tax a woman of 30, and they have neither the wisdom nor the experience to handle them.

The investigation suggested that family life is less stable than it used to be, and that many parents have shirked their responsibilities and have set poor examples for their children. A decline in religious faith has denied lessons in self-restraint and individual responsibility to young people.

In its conclusions, the committee stated that the present deterioration cannot be ascribed to any one group of people, for society as a whole has been responsible for a blurring of values and a loss of respect for human personality. It deplored the fashion in promiscuity that undermines the security of the family and the home. Chastity is the one certain safeguard, but it is difficult to maintain under modern conditions, for it conflicts with modern ideas of independence, freedom from supervision and equality of rights between the sexes.

The report emphasizes that youth must not be condemned, but must be made aware of the force of their emotions when physically aroused. Premarital intercouse is not a sensible preliminary to marriage, and if the institutions of marriage and the family are to be preserved, the accepted standards must be maintained. Their debasement is a threat to society. Young people do not and should not tolerate hypocrisy, and it is obvious hypocrisy for older people to blame youth for a moral failure for which society as a whole is culpable.

Much of the BMA committee's report is applicable to the situation in the United States. Changing mores have imposed pressures which young people are totally unprepared to handle. Society is obligated to equip young men and women to face the realities and decisions of life with courage and with restraint. Parents must be made to understand that the building of character, the inculcation of ideals and values, the development of self-discipline, the creation of wholesome attitudes toward members of the opposite sex, and insight into the meaning of happy marriage cannot be deferred until puberty and adolescence. It is a responsibility that begins when youngsters are in the cradle, and which requires conscientious effort and serious thought from parents, day after day and year after year.

It is a time for moral rearmament, a time in which we must substitute goodness for glamor, wholesomeness for shallow sophistication, chastity for promiscuity, and idealism for cheap and sordid attitudes in our youngsters' minds. This challenge confronts every community in the land, and every home in every community. The welfare and the integrity of our young people have an importance that transcends all other community concerns. It is time for us to direct our energies where they belong.

A CUSTOMER LOOKS AT HEALTH-CARE COSTS

I have been asked to review and to express my opinions upon the recently issued REPORT OF THE COMMISSION ON THE COST OF MEDICAL CARE OF THE AMERICAN MEDICAL ASSOCIATION. Though thus far I haven't been a patient, I have been a customer, for a member of my family has been at the Mayo Clinic, at the New York University Medical Center and at Iowa Methodist Hospital. Thus I can speak from experience as to how it feels to be on the paying end of medical and hospital bills.

Chapter 3, page 39, of the REPORT brings out some interesting comparisons between the price increases that have occurred during two spans of years (A) from 1935 to 1963 (28 years), and (B) from 1952 to 1963 (11 years), in "all items" and in "medical care items."

	Per Cent of Increase	
	1935-1963 (28 years)	1952-1963 (11 years)
1. All Items	123	15
2. Medical Care Items	136	43
3. Physicians' Fees	112	39
4. Hospital Daily Service Charge	479	96

It is obvious from both the 28-year and the 11-year percentages that the greatest increases, in order, have been (1) Hospital Daily Service Charges, (2) Medical Care, (3) Physicians' Fees.

Let's take a look at Hospital Charges and Physicians' Fees. The report shows that the greatest increase has taken place in the cost per day of hospital services. In 1946, the total cost per day for hospitalization was $7.41, and in 1961 it was $30.94 (page 144), or roughly four times as much. Frequent attempts are made to justify the rising cost of hospitalization by pointing out that the average hospital stay has been shortened. Yet the AMA's study shows that the per stay charges increased 216 per cent between 1946 and 1961. How can this price rise be retarded? Laymen aren't conversant with the problems of hospital management, but no matter how serious these problems are, it is certain that agitation for a "medicare"

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program will increase unless these costs are stabilized.

Physicians' fees increased 112 per cent in the 28-year period, and 39 per cent in the 11-year span, whereas the increase of "all items" was 123 per cent for the longer and 15 per cent for the shorter of these periods. These figures show that doctors were rather tardy about increasing their charges, and if the statisticians have been completely fair, we can conclude that they aren't asking proportionally more for their services than they did at the end of the Depression. The Commission's REPORT puts it thus: "Over the period 1935-1963, medical care services rose 159 per cent whereas the Services Index rose 110 per cent. Again, this difference is mainly due to the great increase in the index for hospital services. Physicians' fees rose about the same as services, 112 per cent compared with 110 per cent. Physicians' fees rose less than the indexes for transportation services, laundry services, domestic service, shoe repairs, men's haircuts, beauty shop services and movie admissions."

People like me don't as a rule, object to doctors' fees if the physicians give us good service and if we feel they are taking a real interest in our problems. If a doctor is "cold blooded" and has lost the human touch, we don't want him at all. No matter how skillful he may be, he builds up an antagonism in us which is not easy to overcome.

Fortunately my largely indirect experiences with physicians—with just two exceptions—have been most pleasant.

What a great profession medicine really is! From a patient's day of birth to the day he takes his last breath, a doctor is ready and willing to give him his best service and to use his greatest skills to promote health and to alleviate pain and suffering. It is a wonderful profession, devoted to helping mankind along the pathway of life.

In conclusion, I believe, first, that hospital room rates must be kept from advancing much further, by whatever methods are necessary to accomplish that purpose. I think, second, that all doctors should give careful consideration to the fact that their average fees increased 43 per cent during the 11 most recent years, as compared with only 15 per cent for "all items." Their charges have now advanced approximately to the level of the Cost of Living Index, and care must be taken to make sure they do not start to exceed it.

Hospitals and doctors are necessities, and thus they cannot be priced out of business, but their charges can—and perhaps in some cases have already—become so high that people in the lower income brackets demand legislation to assist them in satisfying their physical needs. We are opposed to Medicare and to other proposals for more centralized control of our affairs from Washington, but we shall have Medicare if hospital and medical expenses continue to rise rapidly.

—Clifford DePuy, Chairman
NORTHWESTERN BANKER

HYPOTHYROIDISM AFTER I^{131} THERAPY

The development of hypothyroidism following the treatment of thyrotoxicosis with radioactive iodine is of great interest to the clinician who must select the therapy best suited to the individual patient who has a toxic thyroid. Two recent articles on this subject* present the results in large series of patients and evaluations of the present methods of treatment.

Experience with the treatment of thyrotoxicosis at Sheffield Royal Infirmary during the period from January 1, 1949, to December 31, 1960, included 251 patients treated by surgery and 925 patients treated with I^{131}. Although there was a considerable difference between the numbers of patients in the two groups, the results that were achieved permit comparisons of the two methods of treatment. Follow-up studies were made during the period between November 1, 1960, and December 31, 1962.

Of the 251 patients who had been treated surgically, 213 were checked in the follow-up clinic. Ten were unable to attend the clinic, but information on them was procured from their family physicians. Thirteen had died, and 15 could not be traced.

There had been just one closely subsequent death among the 251 patients operated upon. The patient had died on the fifth postoperative day from a cerebral hemorrhage unrelated to the operation. Three patients had developed postoperative tetany which was mild and required no treatment. Hoarseness had occurred in 12 patients, but it had persisted in only three of them. Small serous fluid collections or small hematomata that necessitated aspiration had occurred in 39 patients, and there were nine stitch abscesses. Keloids or nodules had developed in 10 patients.

The results in 236 patients analyzed either at the follow-up examination or at death revealed that six months postoperatively 161 (68 per cent) were euthyroid, and at one year the number had increased to 183 (78 per cent). The remaining 22 in that group showed slow improvement and eventually became euthyroid without any further treatment. Thus 205, or 87 per cent, of the 236 patients traced became euthyroid after surgery. Nineteen patients (8 per cent) either remained thyrotoxic after operation or had a recurrence that necessitated further treatment. Thirteen of the group were given radioactive iodine therapy, and the others who survived were treated with antithyroid drugs and became euthyroid. Twelve patients (5 per cent) ultimately became hypothyroid, and

* Green, M., and Wilson, G. M.: Thyrotoxicosis treated by surgery or iodine 131 with special reference to development of hypothyroidism. BRITISH M. J., 1:1005-1010, (Apr. 18) 1964.

it was found that the incidence of hypothyroidism was related to the length of the follow-up period. After one year it was less than 2 per cent, but with the passage of time it gradually rose to 6 per cent after 10 years.

In the group of 925 patients treated with I^{131}, information on 738 was known either because they were attending clinic or because data concerning their deaths had been received. Of 187 patients not regularly attending clinic, 139 reported for the follow-up study, and information on 41 was obtained by mail. Seven patients could not be traced. A total of 79 deaths had occurred, and the cause of death was ascertained in each instance. One patient had developed leukemia.

The general policies that determined the selection of patients for I^{131} treatment included the following: (1) Patients under 40 years of age were not treated unless some complicating features were present. (2) The method of determining the dose of I^{131} was kept constant since 1951, the aim being to deliver 7,000r to the gland. The clinical diagnosis was confirmed by I^{131}-tracer tests, serum cholesterol determinations, electrocardiographic studies, and—to an increasing extent since 1955—by protein-bound iodine determinations.

During the first year following radioactive iodine therapy, the patient was watched very carefully, particularly in the first two or three months. The Sheffield experience indicated that patients who show definite signs of hypothyroidism during the first year after therapy go on to fully established hypothyroidism. The progress of hypothyroidism may be slow, and the full picture may not be evident for a year or two. The authors state that hypothyroidisum which appears more than a year after therapy is never transient.

In the follow-up study of the 918 patients who could be traced, it was found that the most important factor in any analysis of I^{131} therapy was time. In two patients, there was an immediate severe reaction characterized by an acute exacerbation resembling a thyroid crisis. Two other patients had transient and much less severe reactions. All four of these exacerbations were attributed to acute infections, and despite thyroid crises these patients survived.

At the time of review, 71 per cent of the patients were euthyroid. These results had not occurred immediately, however. Within six months, 48 per cent had become euthyroid, and after one year a total of 644 (70 per cent) were euthyroid. After the first dose of I^{131}, there was always some improvement, even though the patient did not become euthyroid promptly. Two doses were necessary in 275 patients; 73 required three doses; 18 had four doses; two received five doses; and one patient required even further treatment.

After I^{131} therapy, the incidence of hypothyroidism rose steadily to reach 29 per cent after 10 years. Those patients first treated at Sheffield before the present method of determining the dose came into use, became hypothyroid in 40 per cent of cases after 11 or 12 years. Subsequently, all patients were treated by a standard method, and in that group a linear rise in the incidence of hypothyroidism was apparent. This result contrasted markedly with the findings in patients who had been treated by subtotal thyroidectomy.

The authors say that there are several factors besides time which appear to increase the likelihood of one's finding hypothyroidism after I^{131} therapy. The incidence is greater in those patients who have had partial thyroidectomies and then have had I^{131} therapy following a recurrence of the disease. It is also greater in patients with small thyroid glands. In the first of these groups, the incidence was 21 per cent between one and four years after treatment, and it then rose to 42 per cent in the period from eight to 12 years after therapy. It was also found that the incidence of hypothyroidism is consistently less in patients under 40 years of age. It was their impression that this difference was not due to age *per se*, but rather to the fact that younger patients usually had smaller glands.

The authors point out that the most notable differences between the two methods of treatment lie in the rapidity with which hyperthyroidism can be controlled and the frequency with which hypothyroidism develops. After subtotal thyroidectomy, most of the patients are relieved of their symptoms within a few months, and a few become hypothyroid. Following I^{131} therapy, there is some delay in the control of hyperthyroidism, but some improvement usually follows each dose. Unfortunately there is a higher incidence of hypothyroidism following radioiodine, and it increases steadily with the passage of time.

It is postulated that successful I^{131} treatment results in a gross histologic derangement of the gland, so that its capacity to respond to stimulus is greatly reduced. Perhaps this phenomenon interferes with the natural turnover and replication of cells, and the retarded cell-development accounts for the increasing incidence of hypothyroidism.

A recent review by Stanbury and DeGroot, of Harvard, discusses the present concepts of I^{131} therapy for hyperthyroidism as practiced in this country.* According to them, the introduction of this form of therapy in 1941 revolutionized the treatment of Graves' disease. It is now used as the primary form of treatment for most patients with thyrotoxicosis. Initially, it was employed cautiously because of radiation hazards, but experience has shown that cancer and leukemia do not develop, and that genetic damage does not occur. Though originally restricted to the treatment of patients over 40 years of age, it is now employed in patients over 25 years of age.

The Harvard group point out that somewhere

* Stanbury, J. B., and DeGroot, L. J.: Current concepts: Problem of hypothyroidism after I^{131} therapy of hyperthyroidism. NEW ENGLAND J. MED., **271**:195-196, (July 23) 1964.

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between 100,000 and 200,000 patients have received I^{131} therapy, and only two possibly malignant tumors have been reported. Thus, one may safely conclude that I^{131} has demonstrated no significant carcinogenic activity. There is a risk of leukemia with exposure to ionizing radiation, no such hazard has been proved with the dose of I^{131} continuously used in the treatment of Graves' disease. Furthermore, no congenital abnormalities seem to have resulted from radioiodine therapy.

These men emphasize that the real danger of I^{131} therapy is in the development of hypothyroidism. Originally, this was accepted as a minor and easily remedied complication, but time has demonstrated that it occurs in 8 to 12 per cent of patients during the first year or two after treatment, and that the incidence increases at the rate of 3 per cent per year thereafter. It has been the general experience that nearly one out of three persons who have received I^{131} for Graves' disease is destined to become hypothyroid.

Experience indicates that radiation with I^{131} not only causes early damage to the thyroid gland but also induces subtle changes that may not be clinically evident for many years. Radiation may cause damage to the chromosomal apparatus, thus interfering with the replication of cells that is necessitated by normal attrition. Damage to blood vessels may result in their gradual obliteration, with resultant progressive ischemia and fibrosis of the gland. A possible immune mechanism has also been postulated, attributed to the release of thyroglobulin during early intense radiation.

Of great interest to the clinician is the difference between the *stable* incidence of hypothyroidism after surgery and the *progressive* increase in incidence after I^{131} therapy. The difference can be attributed to the diffuse nature of radiation therapy in contrast to the results of subtotal thyroidectomy, when a few grams of relatively normal tissue have been left intact. The hypertrophy of this tissue results in normal thyroid function in most patients.

In the judgment of the Harvard group, a reduction in the dose of I^{131} or its division into repeated small doses would unquestionably reduce the total morbidity from thyrotoxicosis. Also, a reduction in the incidence of hypothyroidism during the early months after the control of thyrotoxicosis is no guarantee that the incidence of hypothyroidism will be reduced.

The clinician must evaluate his patient and decide whether the risk of hypothyroidism after I^{131} therapy should affect his choice of treatment. The long-term use of antithyroid drugs carries a risk of side reactions varying from 3 to 12 per cent, and after a year or two about half of the patients have relapses into thyrotoxicosis. Surgical thyroidectomy is not without hazard, even though the complication of hypothyroidism is much less frequent than after I^{131} therapy.

Stanbury and DeGroot conclude by saying, "Each kind of treatment has its advantages and disadvantages, and a choice requires a careful assessment of all the information available, as well as a careful appraisal of the patient. If the choice is I^{131}, the physician assumes a responsibility for the education of his patient and for careful follow-up study for many years in order that delayed development of hypothyroidism may be recognized and appropriately treated."

METHOD FOR THE ANTI-SMOKING CRUSADE

In the United States this year, it is estimated that over 43,000 people will die as a result of cancer of the lung. This toll exceeds the number of deaths from cancer of any other organ, and is more than the annual loss of life from highway accidents.

Despite all the articles that have been written on cigarette-smoking and health, and despite the reports of the Royal College of Physicians, in England, and the USPHS surgeon general, in this country, there still is a group of diehards who refuse to accept the evidence incriminating the cigarette. They won't be convinced until some scientist determines which H radical attached to which specific carbon in the structural formula of nicotine or smoke or tar is carcinogenic for human tissue. Meanwhile, cancer of the lung will continue to be lethal for thousands and thousands of men and women each year.

The evidence relating cigarette smoking to human disease has been evaluated by committees of eminent scientists both in England and in this country. The reports reflect the weight of evidence. Following the issuance of those reports, there was a prompt fall in the sales of cigarettes both here and in Britain, but it was no more than temporary, and sales of cigarettes have since returned to their accustomed level. In the United States, the requirement that a warning label be placed on each cigarette package has just been postponed for six months.

A recent symposium on the subject "Public Persuasion in Health Matters, With Particular Reference to Smoking," under the chairmanship of Sir Robert Platt, was published in the June issue of PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE. In it, the importance of the example that the physician provides to his patient and that parents provide to their children is given great emphasis. Further, it is pointed out that attempts to instill a fear of the consequences of smoking has been relatively ineffectual in deterring youth from smoking. Instead, the chairman urged that young people be made to understand that smoking is an addiction rather than just a habit, and that cancer of the lung is a preventable disease.

According to the British group, the real pressure which motivates young people to smoke is the desire to conform. A reduction in cigarette smoking, if one is to occur, must come about as the result of a change in social behavior and social custom.

REGISTER AND VOTE!

It should be unnecessary to call attention to the fact that election day is November 3, and that it is the duty of every citizen to go to the polls and to vote for the candidates of his choice.

In our largest towns, voter registration is necessary, and there still is time for that procedure. If you live in such an area, make sure that all eligible members of your family have registered. If you have moved recently, you may need to re-register or to make sure that your new address has been entered.

Upon entering the voting booth, every citizen should pause and reflect upon the fact that the right to vote is a privilege. Billions of people in other lands have no choice as to their national and local officials.

Every voter is obligated to weigh the merits of each political platform and the avowed principles of each candidate; to consider the impact of the election upon our United States of America, and upon its relationships in the community of nations; and to judge the probable effects of the respective candidates' philosophies and leadership abilities upon constitutional government in this country.

The medical profession has much at stake in national elections. The memory of recent events in Saskatchewan and in Belgium should prompt every physician to take an active part in them.

A Recording of Abnormal Breath Sounds

A long-playing record that reproduces normal and abnormal breath sounds is being made available to the medical profession by J. B. Roerig and Company Division, Charles Pfizer & Co., Inc.

Accurately reproduced are a variety of actual adult respiratory sounds, and infant and child chest sounds, that are common indications of respiratory ailments such as pneumonia, emphysema, bronchitis, asthma, bronchiectasis and congestive heart failure. Interspersed are normal breathing sounds for comparative purposes.

The record is intended to serve as a refresher for physicians and as a teaching aid for medical schools and hospitals. The recordings were made at the St. Vincent's Hospital Medical Center, New York City, under the direction of Virginia Rooney Pagano, M.D., a specialist in asthma and respiratory diseases.

This record, and a previous one that reproduces heart sounds, are being distributed to physicians on request by Roerig detail men.

Industrial Health Conference

An industrial health conference is to be held at the S.U.I. College of Medicine on December 4 and 5. Co-sponsors are the Central States Society of Industrial Medicine and Surgery and the Iowa Medical Society. No fees will be charged.

Friday, December 4
Medical Amphitheater, University Hospitals

9:20 a.m. "Occupational Health Activities of the State Health Department"—Arthur P. Long, M.D., Acting Commissioner

9:40 a.m. "New Developments in Workmen's Compensation"—Harry W. Dahl, Iowa Industrial Commissioner

10:00 a.m. "Economic Outlook for the Middle West"—Carroll E. Worlan, director, Iowa Development Commission

10:40 a.m. "Skin Manifestations and Dermatoses"—Christian E. Radcliffe, M.D., professor of dermatology, S.U.I.

11:20 a.m. "Emasculating Accidents in Industry"—David A. Culp, M.D., professor of urology, S.U.I.

2:00 p.m. "The Importance of Agricultural Chemicals"—Harold Gunderson, Ph.D., professor of entomology, Ames

"Occupational Health and Agricultural Chemicals"—Clyde M. Berry, Ph.D., associate professor of agricultural medicine, S.U.I.

"Pharmacologic Aspects of Agricultural Chemicals"—John P. Long, Ph.D., professor of pharmacology, S.U.I.

"Clinical Experience and Management of Chlorinated Hydrocarbon Insecticide Intoxications"—Frank L. Lyman, M.D., director, industrial medicine, Geigy Chemical Corporation, Ardsley, New York

"Clinical Experience and Management of Organophosphorus Poisonings"—Harold H. Golz, M.D., director of industrial health, American Cyanamid Company, Wayne, New Jersey

6:15 a.m. SOCIAL HOUR AND DINNER, University Athletic Club

Saturday, December 5
Auditorium, Pharmacy Building

9:00 a.m. "Environmental Health"—James G. Telfer, M.D., assistant director, AMA Department of Environmental Health, Chicago

9:30 a.m. "Back Injuries"—Carroll B. Larson, M.D., head of orthopedic surgery, S.U.I.

10:20 a.m. "Hand Injuries"—Adrian E. Flatt, M.D., associate professor of orthopedic surgery, S.U.I.

10:50 a.m. "Tenosynovitis of the Hand and Wrist, Including the Carpal-Tunnel Syndrome"—Paul R. Lipscomb, M.D., staff member in the Section of Orthopedic Surgery, Mayo Clinic

11:20 a.m. "Cardiac Evaluation Tests"—Donald L. Warkentin, M.D., associate in internal medicine, S.U.I.

12:30 p.m. LUNCH

2:00 p.m. BUSINESS MEETING, Central States Society of Industrial Medicine and Surgery

President's Page



The virtue of the Judaeo-Christian ethic was its emphasis on the primary and ultimate importance of individual man. Created in God's image, man was endowed with a conscience which made him capable of and responsible for originating and controlling his behavior.

Marxism denied this theological interpretation, contending that social existence determined man's consciousness and that the individual existed for the benefit of society. Subsequently, Freud asserted that man was motivated by the subconscious impulses of passion, greed, avarice, etc., for which he was not accountable and that environment alone determined his success or failure.

From this complex has emerged a concept of pseudo-freedom under a paternalistic aristocracy, wherein ordinary man is regarded as a perpetual adolescent, obligated neither to society nor to himself. The new order shields, nurtures and rewards the voluntary rejection of personal responsibility, for such acquiescence is the sine qua non of statism.

Despite our present materialistic prosperity, it is difficult to conceive of an enduring culture based on fiscal insolvency, mortgaged progeny, moral depravity, personal irresponsibility, and callous indifference. Marxism could be the sole survivor.

Otis D Wolfe

President

Summary of Lectures at the Younker Orthopaedic and Rehabilitation Seminar* April 4, 1964

TREATMENT OF CONGENITAL CLUBFOOT

Dr. I. V. Ponseti, professor of orthopedic surgery at S.U.I., presented an extensive analysis of the problems encountered in cases of congenital clubfoot. He pointed out that all articular surfaces involved are curved anatomically, and that these structural curves must be considered as one determines the kinetics of the malformed foot. With the aid of color film, at the conclusion of his presentation, he reviewed the necessary steps in correcting the congenital clubfoot. He stated that from 1 to 1½ months' time is needed for satisfactory correction. During that period, the plaster casts are changed four or five times. In 70 per cent of cases, a subsequent tenotomy of the Achilles tendon is used to correct the equinus.

In summary, Dr. Ponseti discussed the theory of the development of clubfoot, and showed a step-by-step, simple, conservative, safe means of rapidly correcting talipes equino varus.

CURRENT TRENDS IN CHILDREN'S ORTHOPEDICS

Dr. H. A. Sofield, professor of orthopedic surgery at Northwestern University, reviewed numerous pathologies, both traumatic and congenital. For malformed or injured legs, he has three basic principles of treatment:

1. To save legs, use autogenous bone grafts.
2. To save *more* legs, use autogenous bone grafts *and* intramedullary rods.
3. Keep trying, keep trying, keep trying! Remember: no prosthesis is as good as the patient's own leg.

Dr. Sofield showed excellent results in his large series of osteogenesis imperfecta. He has pioneered the use of the intramedullary nail for straightening deformities that have resulted from multiple fractures. He has applied these same principles in the treatment of pseudoarthrosis of the tibia, and he has succeeded in preserving a great many limbs through persistent and often repeated operations, using autogenous grafts and intramedullary nails.

DIFFICULT FRACTURES IN CHILDREN

Dr. Walter P. Blount, head of orthopedics at Marquette University, said that fractures in children differ markedly from fractures in adults in that bone growth aids in healing children's fractures. Epiphyseal fractures are the exception, however. The prognosis in epiphyseal fractures varies with the extent of injury to the epiphyseal plate. He noted that it is impossible to predict the response of the epiphyseal plate to an injury within at least six to eight months.

Correction of angulated fractures in a child is dependent upon (1) the child's age; (2) the distance of the fracture from the end of the bone; and (3) the amount of angulation.

Catastrophic results can follow the opening of a fracture in a child, when specific indications for open reduction are absent. Operative intervention may be indicated in fractures of the lateral and medial humeral epicondyles, the radial neck, the femoral neck and occasionally trochanteric fractures, as well as other fractures involving articular surfaces. It is Dr. Blount's opinion that it is rarely necessary to open fractures of the femur in a male less than 15 years old. He cautioned specifically against open reduction for children's fractures of the distal forearm, and fractures of the humeral neck and supracondylar regions.

DANGERS OF INSUFFICIENT PHYSICAL ACTIVITY

Dr. Hans Kraus, associate professor of clinical physical medicine and rehabilitation at New York University, declared that the urbanized American nowadays is over-stimulated, under-exercised and over-weight. His lack of physical activity contributes a great deal to his frequent "back pain."

Of 81 psychoanalysts whom Dr. Kraus evaluated, 30 to 40 had back and neck pain. In 78.6 per cent, there was a direct relationship between lack of exercise and the occurrence of pain. Relief from pain occurred in 50.4 per cent following prescribed exercise. Tension and emotional factors were contributing causes of the condition. Duodenal ulcer and coronary-artery disease were shown to be present more frequently in persons engaged in sedentary occupations than in those engaged in manual labor. Dr. Kraus also noted that at West Point there were no drop-outs for emotional problems among the cadets who had high physical performance ratings, whereas those with low physical performance ratings had approximately a 14 per cent drop-out rate.

He showed slides demonstrating the various positions in which one can place a patient for evaluations of the back, as to both leg and trunk strength, and for testing back and hamstring tightness. He mentioned that laxity of the hamstrings is common in our population today, from sitting long hours with the hips and knees flexed, and that it is important in low-back complaints.

He mentioned several types of exercise that would be beneficial if done correctly, e.g., swimming should not consist just of jumping into a pool, paddling around for a few minutes, and then spending the rest of a day lying by the side of the pool.

* Cosponsored by the Vocational Rehabilitation Administration of the H.E.W. Department, by the Iowa Orthopaedic Society, and by Iowa Methodist Hospital.

DISTAL FRACTURES OF THE FEMUR

Dr. Hugh Smith, associate professor of orthopedic surgery at the University of Tennessee, reported that 450 cases of fracture of the distal one-fourth of the femur have been treated in a 40-year period at the Campbell Clinic, Memphis, with which he is associated. In 25 per cent of those cases the patients were children under 15 years of age. Conservative management, he said, has been the treatment of choice in 75 per cent of the whole series of cases. Open reduction should be attempted only when it is impossible to achieve reduction in any other manner. The distal one-fourth of the femur does not accept metallic devices well, and 52 per cent of those treated by open reduction and internal fixation achieved greater than 90 per cent range of motion postoperatively, whereas 70 per cent of those treated by conservative (closed reduction) technics obtained greater than 90 per cent range of motion.

In cases of comminuted fractures at the distal end of the femur, or fractures of the "Waring Blender type," Dr. Smith advocates the use of two-pin traction (one through the femoral condyle, and one through the proximal tibia) applied under local anesthesia. Complications encountered in two-pin traction are usually due to (1) occurrence of valgus position, especially in children; (2) improper position of the "K-wires"; or (3) using only one pin or "K-wire."

Dr. Smith noted that non-union was encountered in just 14 of the 450 cases at the Campbell Clinic, and delayed union occurred in just 18 cases. He indicated that there is a trend in his group toward the treatment of these fractures by traction, rather than by open reduction and internal fixation.

FRACTURES AND DISLOCATIONS OF THE CERVICAL SPINE

Dr. Robert W. Bailey, an associate professor of orthopedic surgery at the University of Michigan, reported that there have been 335 cases of fracture-dislocation of the cervical spine at his institution since World War II. Most of these were due to trauma, with auto accidents accounting for 176 cases, and diving accidents accounting for 51 cases. Rheumatoid arthritis, spontaneous post-cervical laminectomy, and dislocation as a complication of severe upper respiratory illness were also responsible for some.

He described two syndromes encountered in this type of injury:

A. Acute *anterior* cervical cord injury
   1. Complete paralysis, with hypalgesia and hypesthesia to the level of the lesion.
   2. Preservation of motion, and vibratory and position sense.
   3. No block revealed by spinal tap.
   4. No progression of the neurologic lesion.

B. Acute *central* cervical cord injury
   1. Disproportionate weakness of upper extremities, as compared with the lower, and usually some impairment of bladder function and varying degrees of sensory loss.
   2. Return of motion progressing from caudal to cranial.

In the acute anterior cervical cord injury, Dr. Bailey said, emergency laminectomy is the treatment of choice. Traction, rather than surgical intervention, is the preferred treatment for acute central cervical cord injury.

AMA Conference on Blood Banking

The American Medical Association will sponsor a Conference on Blood and Blood Banking Dec. 11-12, 1964, at the Drake Hotel in Chicago. The conference is directed to practicing physicians, and Gunnar Gundersen, M.D., of LaCrosse, chairman of the AMA Committee on Blood, has expressed the hope that state and local medical societies will designate representatives to attend.

Objective of the conference is to "motivate the medical profession to evaluate and implement blood banking requirements and to participate generally in local blood banking affairs," Dr. Gundersen said. The theme of the December conference will be: "Blood Banking—Medical Evaluation and Participation." The program will include discussion of the different philosophies and concepts in the field of blood banking.

A session on "Blood Banking Concepts and Systems," with Thomas D. Kinney, M.D., of Durham, N. C., as moderator, will include discussion of automation, central typing and crossmatching, medical sponsorship and supervision, a report on the Knoxville program, and hospital programs. Another session, with Charles C. Smeltzer, M.D., Knoxville, Tenn., as moderator, will cover the theme of Blood Procurement Concepts and Economics, including the areas of volunteer donor programs, paid donor programs, national clearinghouse program, and blood banking economics.

A session on "Blood Insurance-Assurance Plans," will be moderated by Clyde G. Culbertson, M.D., Indianapolis, Ind. A session on "Standards, Inspection and Accreditation," with Charles E. Rath, M.D., as moderator will open the second day of the conference, and will include a study of state laws and regulations.

Other topics on the conference program include studies of serum hepatitis and a discussion of single unit transfusions, blood research highlights, and medical responsibility and leadership in blood banking affairs.

Further information on the conference may be obtained from the Department of Environmental Health, American Medical Association, 535 N. Dearborn St., Chicago.

1964—An Epidemic Year for Rubella (German Measles)

The latest figures released by the National Disease and Therapeutic Index (N. D. T. I.), which is a nationwide survey of private medical practice, show visits for German measles reached epidemic proportions in the first six months of 1964. N. D. T. I., which measures the number of patient-physician contacts involving various diagnoses, estimated physicians received over 1.8 million visits for rubella (German measles) since January of this year. This represented almost a 500 per cent increase over the same period last year.

Historically, the first half of the year accounts for the largest share of rubella visits. This can be clearly seen in the following table which shows a breakdown of visits for the years 1960 through June, 1964.

A regional break of N. D. T. I. information shows that 1964 rubella visits were higher than average in the East, particularly in the New England and Middle Atlantic states. The Eastern half of the country usually accounts for 25 per cent of all visits to private practitioners; rubella visits showed 36 per cent in this region.

N. D. T. I. further reported that an age breakdown on German measles visits showed that the epidemic was confined almost entirely to children and teen-agers with only about ⅓ of the visits being accounted for by adults. The sex breakdown for rubella was about average with females accounting for approximately 60 per cent of the visits to private physicians.

U. S. PATIENT VISITS FOR RUBELLA (GERMAN MEASLES) BY CALENDAR QUARTER (000)

	1960	1961	1962	1963	1964
Jan.-Mar.	65	155	145	105	645
Apr.-June	215	220	215	220	1210
Jul.-Sept.	135	80	75	165	
Oct.-Dec.	80	65	100	100	
Annual Total	495	520	535	590	1855 (to date)

REGIONAL VISITS FOR RUBELLA (GERMAN MEASLES)

	Jan.-June 1964	All Visits to Private Phys. July '63-June '64
East	36%	25%
Mid-West	20%	29%
South	28%	28%
West	16%	18%
	100%	100%

AGE OF PATIENTS WITH RUBELLA

Age	Jan.-June 1964		All Visits to Private Practitioners July '63-June '64	
0- 9	61%	82%	15%	25%
10-19	21%		10%	
20-39	12%		24%	
40 & Over	6%		51%	
	100%		100%	

Postgraduate Courses at S.U.I.

TRAUMA

The registration fee for the conference is $15. This program is accredited for 7 credit hours by the American Academy of General Practice.

Thursday, October 15

6:00 p.m. SOCIAL HOUR AND DINNER—Holiday Inn (About 4 mi. west of Iowa City, at the interchange of Highway 80 and Highway 218.)

8:00 p.m. "Organization Required for Regional Hospitals Treating Trauma"—Professor Dr. Jorg Bohler, chief, Trauma Hospital, Linz, Austria

Friday, October 16

8:45 a.m. "Vascular Injuries Incurred From Trauma" —M. S. Lawrence, M.D.

9:15 a.m. "Renal Shutdown From Trauma"—E. E. Mason, M.D.

9:45 a.m. "Use of Image Amplifier in Treating Common Fractures"—Dr. Bohler

11:00 a.m. "Ankle Fractures"—C. B. Larson, M.D.

11:30 a.m. "Fractures of the Supracondylar Area of Femur and the Tibial Plateau"—L. Den Besten, M.D.

12:15 p.m. LUNCH

1:30 p.m. "Coping With Burn Infections"—S. E. Ziffren, M.D.

2:30 p.m. PANEL: THE PATIENT WITH MULTIPLE INJURIES
S. E. Ziffren, M.D., Moderator
J. Bohler, M.D.
J. L. Ehrenhaft, M.D.
R. H. Flocks, M.D.
G. E. Perret, M.D.
R. T. Tidrick, M.D.

ARTHRITIS AND RELATED DISORDERS

The registration fee for this conference is $45. This program has been accredited for 15 credit hours by the American Academy of General Practice.

Thursday, October 29

1:15 p.m. "Pathology of Arthritis"—Sanford A. Mullen, M.D., pathologist, St. Vincent's Hospital, Jacksonville, Florida

2:30 p.m. "X-ray Differential Diagnosis"—E. P. Van-Epps, M.D.

3:30 p.m. "Nutritional Aspects of Rheumatic Diseases"—Willard A. Krehl, M.D.

4:30 p.m. "Public Health Problems"—Arthur P. Long, M.D., commissioner of health for the State of Iowa, Des Moines

5:00 p.m. DISCUSSION

Friday, October 30

9:00 a.m. "Classification and Differential Diagnosis"—William M. Mikkelsen, M.D., associate professor of internal medicine, University of Michigan

10:00 a.m. "Medical Management of Osteoarthritis"—Edward F. Hartung, M.D., associate professor of clinical medicine, New York University Medical Center

11:20 a.m. "Medical Management of Rheumatoid Arthritis"—Howard F. Polley, M.D., head, Section of Rheumatic Diseases, Mayo Clinic

12:30 p.m. LUNCH
(Afternoon program in the Pharmacy Building Auditorium, combined with that of the Iowa Orthopaedic Society)

1:30 p.m. "Surgery of Arthritic Knee—Review of Cases"—Robert P. Soiseth, M.D.

2:30 p.m. "Musculoskeletal Disorders of Neck and Shoulder"—Dr. Hartung

3:45 p.m. "Surgical Management of Osteoarthritis of the Hips"—Dr. Blount

4:45 p.m. PANEL DISCUSSION: SURGICAL INDICATIONS IN ARTHRITIS—Carroll B. Larson, M.D., moderator

6:30 p.m. COCKTAILS AND DINNER—Curt Yocom's Restaurant
"Adventures in African Bush Medicine"—Lawrence Den Besten, M.D.

Saturday, October 31

9:00 a.m. "Variance of Rheumatoid Arthritis"—Dr. Mikkelsen

10:00 a.m. "Anti-inflammatory Anti-rheumatic Drugs"—John F. Murphy, M.D., Medical Department, Geigy Pharmaceuticals, Younkers, New York

11:00 a.m. PANEL DISCUSSION: DIAGNOSIS AND TREATMENT OF RHEUMATOID ARTHRITIS INCIPIENS (Early)
Merlin P. Strottman, M.D., moderator, resident in rheumatology, University of Michigan
Dr. Hartung
Dr. Mikkelsen
Dr. Murphy
Dr. Polley

12:30 p.m. LUNCH

1:30 p.m. FOOTBALL—IOWA VS. OHIO STATE
(Those wishing tickets for the football game should order them from the Athletic Department, Business Office, Field House, Iowa City, sending a check. The tickets are $5 each, and there is a 25c fee charged for handling the mail order.)

NURSING INSTITUTE ON PRENATAL AND NATAL PROBLEMS

The registration fee for physicians is $15, and for nurses it is $10. This program is accredited for 7½ hours by the American Academy of General Practice.

Wednesday, November 4

9:10 a.m. "Perinatal Mortality in Iowa"—Madelene M. Donnelly, M.D., director, Division of Maternal and Child Health, State Department of Health, Des Moines

9:40 a.m. "The Implications of Perinatal Mortality"—Wm. C. Keettel, M.D.

10:40 a.m. "The Value of Prenatal Care"—Donald H. H. Kast, M.D., and Don O. Newland, M.D., Des Moines

11:10 a.m. "Diet in Prenatal Care"—Willard A. Krehl, M.D.

12:00 noon LUNCH—Quadrangle Cafeteria

1:30 p.m. "Observation of the Newborn"—Gerald Solomons, M.D.

2:00 p.m. "Infection in the Nursery"—Charles L. Burr, M.D., Des Moines

2:30 p.m. "Nursery Technic"—Leone Johnson, R.N., nurse consultant, Division of Maternal and Child Health, State Department of Health, Des Moines

3:30 p.m. SMALL GROUP DISCUSSIONS

7:00 p.m. DINNER—Iowa Memorial Union

Thursday, November 5

9:00 a.m. "Infant Morbidity"—Donal Dunphy, M.D.

9:15 a.m. "Diagnostic Methods for Prevention of Mental Retardation"—Dr. Solomons

10:20 a.m. "Abnormal Chromosomes in the Newborn"—Hans Zellweger, M.D.

11:00 a.m. "Service for Iowa Children"—John C. MacQueen, M.D.

False Hope for Arthritis Sufferers

Organizations that hold out false hope to arthritis victims were attacked in a statement August 21 by Mr. C. William Schneider, executive director of the Iowa Chapter of the Arthritis and Rheumatism Foundation, and Dr. William D. Paul, medical director of the Chapter and a professor of physical medicine at S.U.I.

They charged that a Minnesota firm has tried to sell large numbers of Iowans a 32-day supply of "dried immune milk" for $36.50, and said that the product has not been shown to cause improvement in arthritis cases.

They also warned arthritis patients regarding a drug called dimethyl sulfoxide (DMSO), that was recently discussed in the SATURDAY EVENING POST and LIFE. As a result of these stories, Mr. Schneider said, the Arthritis Clinic at University Hospitals, Iowa City, has received thousands of requests for the drug or for information about it.

Dr. Paul said that DMSO isn't yet available, and won't be available legally for at least two years, pending the satisfactory completion of clinical trials. As yet its usefulness in arthritis cases has not been proved, and its side-effects, if any, haven't been discovered and evaluated.

The unavailability of the drug "coupled with the sensational publicity it has received, may lead it to the black market," Dr. Paul said. He urged Iowa physicians to write to their Congressmen and Senators urging legislative action "to stop sensationalism by national magazines about untested or little-known drugs."

Mr. Schneider proposes to confer with the Iowa attorney-general about action at the state level against promoters of "quack remedies and so-called cures for arthritis."

THE JOURNAL *Book Shelf*



BOOK REVIEWS

NEW AND NONOFFICIAL DRUGS 1964 (Evaluated by AMA Council on Drugs). (Philadelphia, J. B. Lippincott Co., 1964. $4.75).

This old friend, getting more portly with age, is again with us in its annual publication. As in other years the volume is designed to provide "authoritative and unbiased information on new drugs." Drugs discussed herein have been evaluated by consultants, but their mere inclusion does not constitute council endorsement. Usually, if a drug has been on the market for more than five years, it is not included in the volume unless a description of the older drug is needed for an understanding of related drugs, unless new information has been disclosed about its usefulness, unless the profession does not understand enough about the drug, or unless the drug is controversial.

As before, the drugs are listed under general headings, such as "Tranquilizers," or "Hormones." A complete revision of the format is in progress and is not completed in this volume, so that some of the drug-descriptions are essentially self-contained, as was the case in older volumes, and in some new sections information common to a certain group of drugs is listed in an introductory statement so as to avoid repetition.

As before, one gets a comfortable feeling of reliance on authority, when one consults this reference. One also gets an undefinable "good feeling" or feeling of optimism when one reads descriptions of drug actions, even though deleterious effects of a certain drug are included in the write-up. This feeling is different from the aura of pessimism which encompasses the MEDICAL NEWS LETTER, even though the publications are equally authoritative.—*D. A. Glomset,* M.D.

CASES STUDIES IN OBSTETRICS AND GYNECOLOGY, by *F. Jackson Stoddard,* M.D. (Philadelphia, W. B. Saunders Co., 1964. $8.50).

This book is a comprehensive review of obstetrical and gynecologic problems encompassing almost the entire gamut of entities that the practitioner is likely to meet.

Dr. Stoddard uses an illustrative case history to open his discussion of each disease entity. This is followed by appropriate questions and answers to stimulate a logical approach to the problem in question. His discussions and comments at the conclusion of each case history give a very good summory of current ideas as to the etiology and management of each disease. At the end of each chapter there is a very current and adequate bibliography for the reader who wants to pursue a particular entity in greater detail.

Regardless of the reader's background, whether he be a student, a general practitioner or a specialist in this particular field, the book is worthy of careful attention, for it contains much worthwhile information.

Dr. Stoddard is to be congratulated on a job well done.—*John Rinella,* M.D.

SYNOPSIS OF PATHOLOGY, SIXTH EDITION, by *W. A. D. Anderson,* M.D. (St. Louis, C. V. Mosby Company, 1964. $9.75).

The author states in the preface to this Sixth Edition, "Carrying on the tradition of previous editions, this volume attempts to present pathology in a compact, concise, yet comprehensive form." This particular volume has admirably succeeded in carrying on the tradition of previous editions which have by now become very familiar to sophomore medical students in pathology.

The current edition has enough detailed information to provide a quick factual reference for physicians who wish to keep up without using one of the large encyclopedic texts.

The illustrations, of which there are over 400, and the text, are well done and easily readable.

The author has included a minimum of bibliography in order to maintain the small size of the book.

This book can be recommended to anyone interested in obtaining a comprehensive synopsis of general pathology.—*John W. Green, Jr.,* M.D.

SCIENCE AND PSYCHOANALYSIS, VOL. VII: DEVELOPMENT AND RESEARCH, *by Jules Masserman,* M.D. (New York, Grune and Stratton, Inc., 1964. $9.75).

This book is composed of papers presented to the seventh annual meeting of the Academy of Psychoanalysis. These were meant to form a comprehensive review of the progress and development of psychoanalytic theory during the last 50 years. The book fulfills this function well, and in a readable, concise fashion.

The book is divided into five sections. The first part is directed to reviews of the contributions of such psychoanalysts as Anna Freud, Erick Erickson, Sandor Rado, Harry Sack Sullivan, Franz Alexander and others. These show the change of emphasis from the id psychology of Freud through ego psychology to the currently popular social psychology.

The second section contains research studies by Harry Harlow and Jules Masserman on the experimental behavior of animals. These support the theories

indicated in the first section. The article by Harlow concludes by noting the apparent necessity for multiple affectional systems, including peer attachments, for the normal emotional maturation of monkeys.

The last three sections of the book include thoughtful reports of research projects on normal and abnormal behavior of human beings and their therapeutic implications. These reports are certainly not definitive, but allow the authors an opportunity to offer their own particular ideas which warrant further thought and investigation. One of these is written by a 1949 graduate of the University of Iowa School of Medicine, Dr. Paul Lowinger. In it, he attempts to evaluate the role of the psychiatrist's personality in interviews. This is of interest primarily to psychiatrists.

There is a delightfully lucid seven page article written by Dr. Helen Carlson entitled "Identity Confusion," which describes the acute confusional state of some young adults, the necessity for early treatment, and the favorable prognosis with adequate psychotherapy.

This book could be read with benefit by all persons interested in the emotional maturation process of human beings, and by others who wish to be brought quickly up to date on psychoanalytic thinking.—*Jean Glissman,* M.D.

DRUGS OF CHOICE, 1964-65, by *Walter Modell,* M.D. (St. Louis, C. V. Mosby Co., 1964. $16.75).

Forty-seven contributors have updated this biennial compendium of how and what to prescribe for acne, zoonoses, and a great many conditions in between. For the most part, the text adheres closely to the stated theme of drug therapy, although such diverse subjects as electrical countershock for cardiac arrhythmias and how to "scrub up" for surgery are included.

Minor lapses are not frequent enough to detract from the value of this reference volume. Exceptions might be taken to the use of "preview" for "purview" (of the federal narcotic law) (p. 223); and to the repeated reference to a "reciprocal" relationship between calcium levels and digitalis toxicity (pp. 393, 398, 416) when an opposite meaning is intended. One raises an eyebrow at the statement that "no serious reactions have been encountered" with colymycin (p. 735).

Despite such distractions, the book is a useful addition to the practitioner's working library. Detailed chapter headings, tables and indices make the material readily available. A drug index with generic and trade names is a helpful feature.—*Herman J. Smith,* M.D.

CANCER OF THE STOMACH, by *William H. ReMine,* M.D., *James T. Priestley,* M.D., and *Joseph Berkson,* M.D., and members of the staff of the Mayo Clinic (Philadelphia, W. B. Saunders Company, 1964. $11.50).

This comprehensive and authentic monograph on carcinoma of the stomach expresses the combined experience of 12 Mayo Clinic specialists in cooperation with Drs. ReMine, Priestley and Berkson.

The historical surgical aspects of gastric carcinoma in addition to more recent diagnostic methods are discussed. Various operative procedures, indications and results are given. Then too, wisdom incident to clinical decision regarding surgery highlights this book. There are chapters on anesthesia, postoperative care and pathology of gastric neoplasms. A statistical study of mortality trends and analysis in relation to survival rates concludes the monograph.

Numerous illustrations of Roentgen films, equipment employed and operative technic, together with extensive references to the literature, complete the monograph.

Seldom do we see a more extensive and authoritative monograph contributed to by individuals so expert in their particular fields.

I can recommend this volume not only to students, but to general practitioners and surgeons. There is a great deal in it for every doctor.—*Joseph B. Priestley,* M.D.

CORONARY HEART DISEASE (The Seventh Hahnemann Symposium), ed. by *William Likoff,* M.D., and *John H. Moyer,* M.D. (New York, Grune & Stratton, 1963. $17.75).

More than 100 contributors are represented in this contemporary view of the spectrum of ischemic heart disease. As is to be expected, the diversity of authorship makes for uneven presentation of what Dr. Likoff introduces as "the primary health problem of our time."

The anatomy and physiology of the coronary circulation are reviewed, and the etiology of atherosclerosis, is debated. The controversy over the use of anticoagulants is recognized, but not resolved. Raymond Pruitt contributes a sparkling historical account of the medical "greats" associated with the clinical recognition of angina pectoris. Various authors deplore the limitations of electrocardiography in diagnosis, and of coronary "vasodilator" drugs in treatment.

Enzymes and estrogens, smoking and surgery, psychotherapy and physiotherapy, problems of law and of lipids—all are discussed, and most of them ably. There is more here to contemplate at the fireside than to use at the bedside, but this is a worthwhile review of an active and provocative segment of modern medicine.—*Herman J. Smith,* M.D.

COMMUNICABLE AND INFECTIOUS DISEASES, FIFTH EDITION, by *Franklin H. Top,* M.D. (St. Louis, The C. V. Mosby Company, 1964. $21.00).

One of the important criteria for estimating the value of a medical book is knowledge of the qualifications of the author. Dr. Franklin H. Top, professor and head of preventive medicine and environmental health at S.U.I., is recognized nationally and internationally as an authority in the field of communicable and infectious diseases. It is to be expected, therefore, that a book written by him would be excellent in all respects, and, in the opinion of this reviewer, his book is indeed excellent.

The first edition appeared in 1941, and its popularity and usefulness are attested by the fact that this is

the fifth edition. True, revisions have been made necessary largely by the rapid advances that have occurred in antibiotic and chemotherapeutic agents, but care has been taken also to keep abreast of changing concepts concerning diseases themselves.

In putting together this 900-odd page volume on problems associated with microorganisms which attack mankind, Dr. Top has had the able assistance of many contributors selected because of their special knowledge about some disease, group of diseases or some related phase in the control and management of infections. This is well illustrated by Chapter 6 which contains nearly 60 pages on chemotherapeutic and antibiotic agents by Dr. Mark H. Lepper, professor and head of preventive medicine at the University of Illinois College of Medicine. The chapter is literally a gold mine of information on the development, uses and pitfalls of these revolutionizing agents. Pediatricians will be interested in Chapter 10 on histoplasmosis, by Amos Christie, and Chapter 32 and Chapter 45, by Warren E. Wheeler, on infantile diarrhea due to enteropathogenic escherichia coli and on ophthalmia neonatorum.

The book is divided into two sections. Section one—about 190 pages—is devoted to general considerations applicable to comunicable diseases. The second section, comprising the remainder of the book, presents the specific communicable and infectious diseases in an intriguing manner, the basis of which is the common portal of entry of the various types of pathogenic organisms. First comes the respiratory tract, and the diseases caused by fungi, bacteria and viruses which gain entrance to the body by this route are discussed under 22 separate chapter headings. Next are listed the diseases caused by bacteria, parasites and viruses which involve the gastrointestinal tract, and lastly the large number of diseases whose portal of entry of organisms is via the mucous membranes or skin by contact, trauma or bites.

There are 15 very beautiful colored plates, most of which illustrate the common communicable diseases of childhood, such as measles, scarlet fever, chicken pox, etc. Of special interest to this reviewer were the plates of faucial diphtheria, small-pox and the rose spots of typhoid, for he has seen all of them in the past —an experience fortunately denied most physicians of the present day.

This is one of the important basic reference books that all physicians should have on hand for frequent consultation. In addition it should be in all medical libraries and health departments. It's "Tops" in its field. (Pun intended.)—*L. F. Hill,* M.D.

BUSINESS MANAGEMENT OF A MEDICAL PRACTICE, by *Bernard D. Hirsh,* LL.B. (St. Louis, The C. V. Mosby Company, 1964. $7.75).

This is one of the most outstanding texts I have read in the past 12 years.

Brevity continues to have its great virtues and Mr. Hirsh has classically demonstrated these virtues. It was most refreshing to cruise easily through his text and avoid the usual lengthy and laborious explanations most intelligent readers do not need in the first place.

Also important is the content of the reference book. It is very obvious that Mr. Hirsh devoted extra patience and care to his subject matter. The contents are complete, comprehensive, and clear. The text, as a physician's or medical group manager's desk reference, is by far the most outstanding I have seen, simply because it skips little, if anything, that one is likely to come across in practical administration.

The chapter on "Credit" is outstanding. It superbly teaches a point to physicians which everyone has avoided simply out of embarrassment. Every dean of every medical school should at least make this one chapter mandatory reading for all students about to graduate. If taken seriously and in the vein intended by the author, this priceless advice would indeed have profound effects.

I highly recommend this text to every physician, young and not so young, as a standard reference work.

My sincere compliments to Mr. Hirsh on a rare and outstanding piece of work. He can be justifiably proud. —*J. J. Krapek,* Clinic Manager.

BOOKS RECEIVED

DYNAMIC PATHOLOGY, by *Maurice M. Black,* M.D., and *Bernard M. Wagner,* M.D. (St. Louis, C. V. Mosby Company, 1964, $8.00).

SYNOPSIS OF PATHOLOGY, SIXTH EDITION, by *W.A.D. Anderson,* M.D. (St. Louis, C. V. Mosby Company, 1964, $9.75).

INFECTIOUS DISEASES OF CHILDREN, THIRD EDITION, by *Saul Krugman,* M.D. and *Robert Ward,* M.D. (St. Louis, C. V. Mosby Company, 1964, $15.75).

MASSAGE PRINCIPLES AND TECHNIQUES, by *Gertrude Beard,* R.N., R.P.T. and *Elizabeth C. Wood,* A.M., M.S., R.P.T. (Philadelphia, W. B. Saunders Company, 1964, $6.00).

MODERN TREATMENT, VOL. 1, NO. 4, TREATMENT OF INFECTIOUS DISEASES, by *Lowell A. Rantz,* M.D. (New York, Harper & Row, July, 1964, Bimonthly, $16.00 per year).

PEDIATRIC NEUROLOGY, by *Thomas W. Farmer,* M.D. (New York, Harper & Row, 1964, $18.50).

TEXTBOOK OF PEDIATRICS, EIGHTH EDITION, by *Waldo E. Nelson,* M.D., D.Sc. (Philadelphia, W. B. Saunders Co., 1964, $18.00).

REPORT OF THE COMMISSION ON DRUG SAFETY, by *Lowell T. Coggeshall,* M.D. (Washington, D. C., Federation of American Societies for Experimental Biology, 1964, $5.00).

W. B. SAUNDERS COMPANY features the following new books in their full page advertisement appearing on page iii in this issue:

DOCTOR'S EASACCOUNT RECORD SYSTEM
New!—A financial record keeping system tailored specifically to the requirements of physicians.

HUGHES—PEDIATRIC PROCEDURES
New!—Step-by-step instructions on scores of management procedures for child patients.

BATES AND CHRISTIE—RESPIRATORY FUNCTION IN DISEASE
New!—A valuable aid in managing those patients suffering from lung conditions.

Why Be a Member?

JOHN P. PRICE, M.D.

Today someone asked me "Are you a member of AAGP? Does it offer you anything that you are unable to get from the other medical organizations to which you belong?" The answer to both questions is "Yes."

In my billfold I carry seven cards, each of which indicates that I am a member in good standing of a well known and highly respected medical organization. I, myself, made application for membership in six of them, but I was invited to join the AAGP by a colleague whom I greatly respect both for his ability as a physician and for his stature as a man.

I expect to give something to each of these organizations, and I expect to receive something in return. From six of them, I should say that I get returns directly proportional to my contributions, but from the AAGP I receive more than I give.

In addition to paying my dues to AAGP, I use my energies and talents in whatever duties and assignments the other members give me, such as serving on the board of directors or on committees. These things I do for all the other organizations too, but the others require nothing more from me or from the other general practitioners and specialists who belong to them. The AAGP requires more. I am most grateful that the AAGP insists that I continue my medical education and that I include among my responsibilities the maintenance of a partnership in the life of each of my patients, in his family and in all phases of community activity.

The impetus that I get from the AAGP for continuing my medical education is not unlike the stimulus I get from family worship and regular church attendance with fellow Christians. One is frequently told by his colleagues who hunt, fish or play golf on Sunday that they can worship God in the woods, on the lakes and on the golf course. That might well be, but do they actually do it? Similarly, the fellow physician who says he can continue his medical education as a member of medical organizations other than the AAGP doubtless *can* do so. But because those other organizations don't insist on his attending postgraduate courses, many others of his interests and activities preempt his time. The AAGP will not permit me, or any other of its members, to fall into this trap of conflicting interests, or to become too busy at home and to make mistakes which place medicine in an unfavorable light with the public.

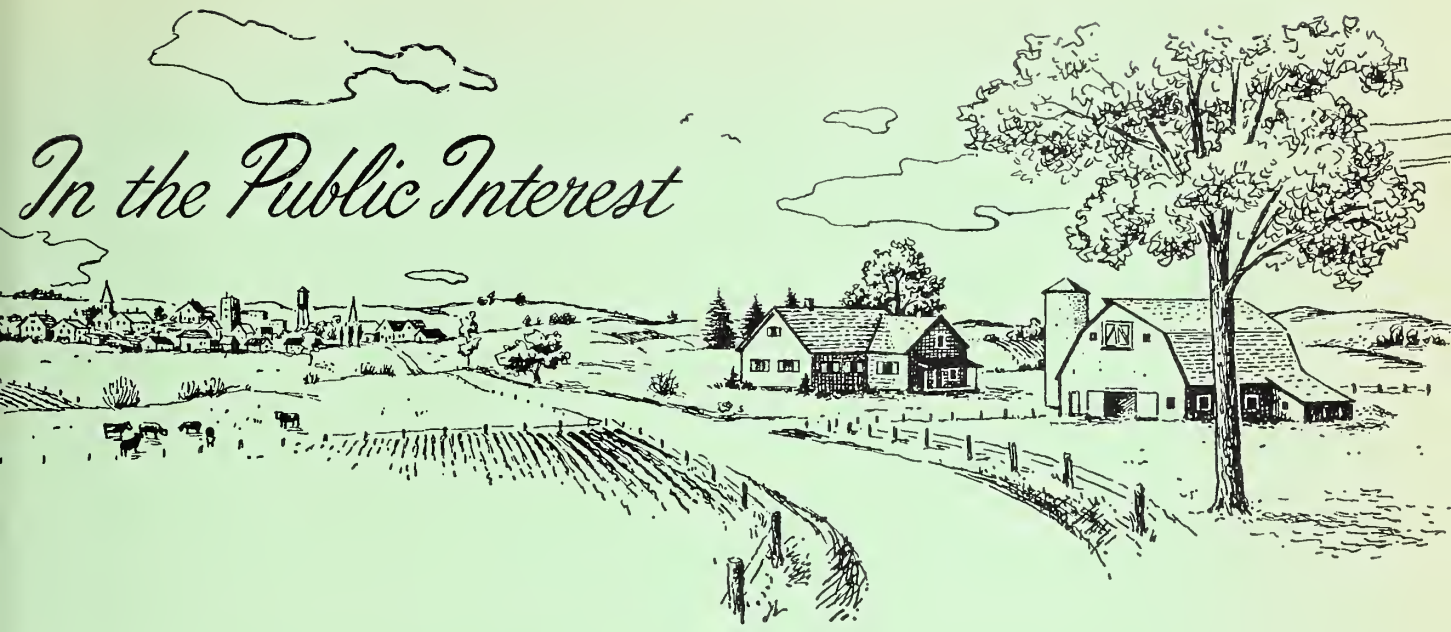
Medical centers, researchers and drug manufacturers are standing with medical advances on silver platters, waiting for us to accept their new technics. In many instances they are asking to come into our communities to give us essential information. This knowledge is promptly made available to me as a member of AAGP, and in turn I can transmit it in the over all care I give to my individual patient, his family and my community. In consequence, my community will never accept any other type of medical care.

Our responsibility as members of AAGP is unique in that we are a group of men of all ages who have a common interest in all aspects of the individual, the family, and community life. Our patients and their families are truly three-dimensional for us. Since we are acquainted with each patient's social and economic problems, and know that they can be a cause of his disorders, we are in a position to understand and to consider all factors in taking care of him.

These facts place us in the front line of America's fight to continue the free-enterprise type of medical care. These facts also make it mandatory for AAGP members to recruit capable boys and girls for medical and paramedical schools, and to see that they get whatever financial help they need. Whether we accept it or not, it is our responsibility to provide leadership for various civic organizations, as well as to accept positions on hospital staffs.

Our late President said, "Ask not what your country can do for you, but what you can do for your country." As a doctor, I ask not what the AAGP can do for me, but I can do for my patient, for his family and for my community through the AAGP.

Attend the
AMA CLINICAL MEETING
Miami Beach, Florida
November 29-December 2



A Glimpse at the Doctor's Schedule

"Everyone knows what a doctor does for a fee, but practically no one knows what he does *for free.*" Thus began an article in the Sunday edition of the NEW YORK HERALD TRIBUNE for June 21, 1964.

Because the patterns of life in New York City and its environs differ considerably from those in the small cities and open country of the Midwest, it seems scarcely worthwhile to recount the sorts of work that the newspaper said doctors in that area do without pay. But there may be some utility in enumerating the comparable tasks to which Iowa doctors devote what, for lack of a more accurate phrase, must be referred to as their "spare time." Most of our readers won't find anything in the ensuing account that they haven't known for a long time, but it may serve to remind them of the medical profession's tradition of public service that they have a responsibility for maintaining.

Doctors' "spare time," of course, is almost a myth. Few other people work regularly at their occupations from seven in the morning until six at night, as most private practitioners do, and virtually no one else is "on call" as they are, throughout the night. Yet physicians are conscientious men. In a word, they are professionals—men who habitually place the interests of their fellows ahead of their own. Thus, each of them somehow makes room in his weekly schedule for activities that by no stretch of the imagination can be called recreation.

DONATED MEDICAL SERVICES

Physicians donate their time and talents in caring for considerable numbers of patients, despite the fact that governmental programs now finance services for some of the people who can't pay their own health-care expenses. When a local medical society contracts with a municipality or a county for the treatment of indigents at a public hospital or for the care of residents at a county home, for example, the doctors who provide the care seldom get the checks. Instead, the payments are used to finance the medical society's activities, most of which benefit the community in specific ways. In addition, there still are many economically marginal people who, though able to pay none or just a portion of their doctor's fee, fail to qualify for medical-aid programs.

Hospital boards, composed of laymen, manage the business affairs of their respective institutions, but there are many aspects of hospital management that must be left to the doctors who make up the medical staff. For this highly necessary work, no fees are paid. The members of the medical staff direct and supervise the work of nurses, therapists, technicians and aides; they serve on tissue committees to maintain standards in the performance of surgery; they perform postmortem examinations and attend meetings afterward to consider whether or not everything possible was done to prolong the patient's life, and if a mistake was made, they decide how best to prevent its recurrence under similar circumstances; and they are currently establishing utilization committees, the chief purpose of which will be to hold health-insurance premiums down by making sure that patients aren't admitted to the hospital needlessly, kept there overlong, or given superfluous tests.

At the hospitals, doctors undertake other tasks from which they may derive considerable satisfaction, but for which they aren't paid. They take the lead in planning for the management of mass casualties in case of disaster. They help to manage

blood banks and blood-replacement associations. They engage in research projects to develop new diagnostic or treatment technics, to improve existing methods or to test newly developed drugs or devices. Or they review their own and their colleagues' experience with various medications and operative procedures in an effort to discover which is the best treatment for a particular malady. If the hospital has a school of nursing, they help teach the student nurses, and if it has an internship and residency program, they spend some of their time teaching the young doctors.

Many of them volunteer, one or more times a year, to take junior students from the S.U.I. College of Medicine as preceptees for a month, and not only give the young men a glimpse of the private practice of medicine, but pay their living expenses for that period.

In the field of school and community health, Iowa physicians conduct both regular and special immunization programs. Many county medical societies hold clinics each fall at which youngsters about to enter school for the first time are checked as thoroughly as possible and the immunization status of each of them is reviewed. Some societies conduct similar clinics for 4-H clubs or other youth groups, and nearly all of them have now held Sabin-vaccine clinics for the entire populations of their respective counties. The doctors who serve as team physicians for high schools no doubt find it enjoyable to attend the games, but they also protect the youngsters by giving immediate care to the injured, by couseling the coach about the fitness of convalescent team members, about protective equipment and about practice schedules.

Physicians serve local governments as chief or deputy medical examiners or as local health officers. One or more of them in every community has performed physical examinations for the draft board for many years. They have been paid for some of these tasks, but the stipend has never been sufficient recompense for the time which the duties kept the doctor away from his family or from his practice.

PARTICIPATION IN CIVIC AFFAIRS

Iowa doctors hold or have held posts in municipal government, membership on boards of education, seats in the General Assembly, and consultant positions in state government. For some such work there is a *per diem* or a salary, but considerable financial sacrifice is involved. In standing for election or in accepting appointment, physicians do no more than what capable and well-educated Americans should do, and their service is mentioned here only to indicate that they accept the responsibilities of citizenship along with their professional obligations.

Many of them are leaders in church work and in lodges; in service organizations, some of which have medical projects (such as the Lions' Eye Bank); and in political parties. Their advice and other help is especially valuable to the local and state divisions of national health organizations such as the Arthritis and Rheumatism Foundation, the American Cancer Society, the American Heart Association, the National Foundation and the Tuberculosis and Health Association, to name just a few. By accepting frequent speaking engagements, they instruct the public in the prevention of illness, in first aid and in the significance of recent medical advances.

Individually and through medical societies, doctors recruit young people for the health professions. The local doctor is first to see that his practice is growing too big for him to handle satisfactorily, and it is he who succeeds most quickly in bringing in an additional man.

SERVICE THROUGH THE IOWA MEDICAL SOCIETY

In Iowa, where many county medical societies are very small, doctors conduct an especially large share of their public health work through their state medical society. Through it they establish standards for blood-banking and for the staffing and procedures of community mental health centers; they help to determine Blue Shield coverages; for their own postgraduate medical education, they arrange and finance scientific meetings and publish the JOURNAL OF THE IOWA MEDICAL SOCIETY; they undertake to settle disputes between doctors and patients, governmental agencies or insurance carriers; they cooperate with the other professions; and they work with various branches of the state and national governments. They have set up the Iowa Medical Foundation, to make loans to medical students and to finance health projects, and though doctors will make most of the donations to it, they invite contributions from other people. Incidentally, the IMS officers are happy to receive offers of assistance from additional member physicians who are willing to serve on state society committees.

These are just some of the tasks that Iowa physicians do gratis, or for recompense scarcely commensurate with their sacrifice of time. No previous mention has been made of the postgraduate conferences arranged by the S.U.I. College of Medicine, by medical schools in other states, by the national and state organizations of various sorts of specialists, and by the American Academy of General Practice and its state chapters. Each doctor attends some of these each year, paying his expenses and sometimes a rather stiff registration fee out of his own pocket, so that he may learn new methods to use for the benefit of his patients. And the hours each doctor spends at professional reading—new textbooks and the floods of weekly and monthly medical journals—represent sacrificed leisure.

Doctors in the New York City area, as the HERALD TRIBUNE said, do a lot "for free," but Iowa doctors are no less conscientious and public-spirited. Let's keep up this good work!

Iowa Association of Medical Assistants

8th Annual AAMA Convention

SHERATON-OKLAHOMA HOTEL
OKLAHOMA CITY, OKLAHOMA
OCTOBER 13-18, 1964

Several hundred medical assistants from all over the United States will be converging on Oklahoma City to participate in sessions to increase their knowledge of medical affairs, to sharpen on-the-job skills, to exchange ideas, to renew friendships, and to enjoy the social activities planned for the after-dinner hours.

Tuesday, October 13

Board of Trustees meeting
Dinner for Trustees and Medical Advisors

Wednesday, October 14

Registration
Board of Trustees meeting
House of Delegates meeting
Reference Committee meetings
Tour of Oklahoma City
Evening campaign parties

Thursday, October 15

House of Delegates meeting
Luncheon for Delegates, Trustees and Advisors
Open Door Clinic
Evening Party, Arkansas Medical Assistants

Friday, October 16

General Session
Presidents' Luncheon, Parade of State Flags
Open Door Clinic
Educational Symposium, Wyeth Laboratories
"HANDLING EMERGENCIES IN THE MEDICAL OFFICE"
Board of Trustees meeting
Chuck Wagon dinner

Saturday, October 17

Educational program
"WHAT IS FITNESS," Dr. Donald L. Cooper, Director, Oklahoma State University Hospital and Clinic
"MEDICAL DEMOCRACY IN ACTION," Dr. Milford O. Rouse, Speaker of AMA House of Delegates
"COMMUNIST WEAPONS IN THE CONTINUING COLD WAR," Dr. Elvin M. Ames, Bartlesville, Oklahoma
Luncheon: Featured speaker, Dr. Donovan Ward, Dubuque, Iowa, President of American Medical Association
Workshops:
"CERTIFICATION FOR MEDICAL ASSISTANTS"—Moderator, Mrs. Mary Kinn, Chairman AAMA's Certifying Board
"PATHWAY TO LEADERSHIP"—Moderator, Mrs. Marian Little, Chairman AAMA's Education Committee
Reception
Inaugural Banquet—Master of Ceremonies, Dr. Carl E. Clark, Chairman AAMA's Medical Advisory Committee
Featured Speaker, G. Robert Gadberry, vice-president, Fourth National Bank and Trust Company, Wichita, Kansas, "YOU ARE THE DIFFERENCE"
Installation of Officers—Miss Barbara Wade

Sunday, October 18

Coffee and reception for new officers
Breakfast
Close of convention
Tour of Oklahoma City

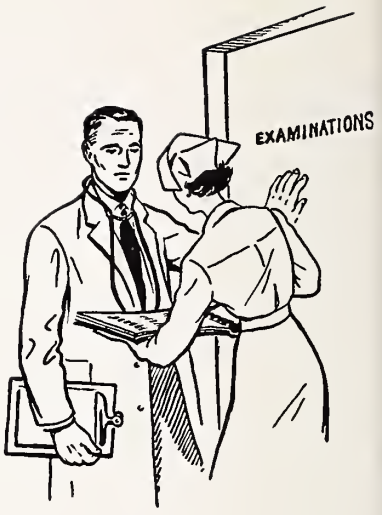
On Friday morning from 8:30 to 10 there will be a general business session. AAMA President Judy Coleman will preside, and participating will be Miss Alice Budny, immediate AAMA past president; Dr. George M. Fister, past AMA president; Mrs. Veronica O'Brien, president of Oklahoma State Medical Assistants Society; Hon. Henry J. Bellman, governor of Oklahoma; Dr. Harlan Thomas, president of Oklahoma State Medical Association; Mrs. Rose Merritt, AAMA president-elect; and Mrs. Stella Thurnau, AAMA Executive Secretary. A memorial service will also be held during the morning session, and the Wyeth educational symposium will follow from 10:30 to 12:30 p.m.

The registration fee is $30.00. This covers the Friday luncheon and Chuck Wagon dinner, Saturday luncheon, social hour and installation banquet, and Sunday breakfast. Tours of Oklahoma City are extra. Convention registrations are mailed to the AAMA Executive Office, 510 N. Dearborn St., Chicago, Ill. 60610. A 6-day post-convention tour to Mexico has been scheduled leaving Oklahoma City Sunday afternoon October 18 and returning to Dallas and/or Oklahoma City October 24. Cost, including everything *except* meals, is $259.50 per person. Tour reservations can be made with Gerry Schwartz, 522 N.W. 11th St., Oklahoma City, Oklahoma.

SEE YOU IN OKLAHOMA CITY?

HELEN G. HUGHES

THE DOCTOR'S BUSINESS



The Net-Net Lease

HOWARD D. BAKER
Waterloo

With property taxes and maintenance increasing substantially and constantly in recent years, it has become increasingly difficult to write a long-term lease assuring a property owner an equitable return on his investment. In many cases, taxes and maintenance have doubled—and occasionally tripled—over a five-year period. In addition, it is generally necessary to estimate such costs even prior to construction, and estimates will frequently vary as much as 25 to 50 per cent from actual experience after the project has been completed.

The first trend toward a solution of this problem was an "escalator clause" for rent. Basically, this clause provides for the adjustment of rents upward whenever property taxes exceed a certain amount. It requires frequent adjustment of rent, and generally results in one or two years of operation at low profit or at a loss because of the time lag between assessment of taxes and adjustment of rents.

As an obvious and simple solution for a problem severe enough to result in the occasional bankruptcy of a landlord, the "net-net lease" has come into popular use in recent years. This type of lease is not a new idea, but its use until recently was pretty much limited to very large ventures such as multi-million-dollar buildings in large metropolitan areas.

Basically, the "net-net lease" provides for the payment to the facility owner of a fixed rental based upon a percentage of his original investment in land and buildings. In addition, the tenant assumes liability for all taxes, insurance, utilities and maintenance. Under this arrangement, the owner is not liable for anything other than amortization of any debt on the facility.

The landlord's cash position can be readily determined by comparing rental receipts to mortgage payments. His tax position can be determined by reducing rental receipts by the known figures for depreciation and interest.

Rental rates on this type of lease vary with the term of the lease. Generally about 9 per cent of original investment is maximum on a five-year lease; 8½ per cent on a 10-year lease; and 8 per cent on a 15- to 20-year lease.

To illustrate the simplicity of such a lease, let's assume that the owner invests $30,000 in land and an additional $90,000 in building, for a total of $120,000. He leases it on a ten-year basis at 8½ per cent "net-net." The tenant pays *all* expenses, including utilities, repairs, taxes, insurance and janitorial service. In addition, he pays the owner $10,200 annually. The lease contains the same default provisions for failure to pay all expenses as standard leases do for nonpayment of rent.

Assume further that the owner has a 20-year mortgage for $80,000 at 5½ per cent. His *cash* position is $10,200 rental receipts less $6,605 mortgage payments. *Taxwise,* his $10,200 rentals are offset by average annual interest of $3,600 and maximum tax depreciation averaging $3,000.

His average *taxable income* during the first ten years will be about $3,600 or 3 per cent. His true economic yield will be $10,200 less estimated depreciation of 2 per cent, or $1,600, based upon the projected economic market value at the end of 10 years, or $8,600 (7.2 per cent).

Although this approach is very logical for large single-tenant properties such as drug stores, grocery stores, filling stations and other commercial properties, it is generally not very well suited for multiple-tenant projects because of the problems of apportioning taxes, insurance and other expenses. It can, however, have application where, for example, one member of a partnership owns a building which he rents exclusively to the medical partnership.

Such leases can also be used in conjunction with about all "option-to-purchase" arrangements.

If you now own or are considering the purchase of a rental facility, this rental technic may be "tailor-made" to assure you a constant equitable return on your investment.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Miami Beach Plays Host to AMA Clinical Convention

A scientific program attuned to the current needs and interests of the practicing physician is planned for the 18th clinical convention of the American Medical Association.

Immunization, depression, cardiac arrhythmias, vascular occlusive diseases, emphysema, iatrogenic diseases, and hypertension are only a few of the major areas to be explored during the four-day meeting, Nov. 29-Dec. 2.

More than 300 physicians will participate in a full program of lectures, exhibits, motion pictures, color television, fireside conferences and breakfast roundtables.

A new feature of the clinical convention this year is a postgraduate course on obstetrics for the general practitioner. Fifteen lectures will be presented during three sessions ranging from infertility and prenatal care through complications of labor and anesthesia to postnatal care and maternal mortality. Chairman of the course is Ralph W. Jack, M.D., Miami.

The entire scientific program, with the exception of the fireside conferences and breakfast roundtables, will be held in Miami Beach Convention Hall. The modern, single-level structure, completed in 1959, is fully air-conditioned and boasts one of the finest sound amplification systems to be found anywhere in the nation. It is located just one block from the Lincoln Road shopping centers, Florida's Gold Coast and the ocean.

The popular fireside conferences, presented as a joint session of the American College of Chest Physicians and the AMA, will be held Sunday night, Nov. 29, at the Fontainebleau Hotel. There will be 11 tables at which 50 to 60 discussion leaders will engage in an informal and free exchange of views on a variety of medical subjects.

Six breakfast roundtables are scheduled at the di Lido Hotel. Topics include cancer of the thyroid, cosmetic surgery and peptic ulcer.

In addition, 125 scientific exhibits will be on display during the meeting, including a special exhibit on fractures, and some 30 medical motion pictures will be shown in the afternoon Monday through Wednesday.

Blue Shield Grows

Membership in Iowa Blue Shield reached an all-time high of 732,077 at the close of 1963, according to the company's annual report. Payments for members' care amounted to nearly $15 million, representing approximately 92 per cent of premium income. More than 75,000 Blue Shield members are 65 years of age or older.

The annual report of the Health Insurance Council asserted that over 145 million persons, 77 per cent of the population of the United States, had some form of health insurance to help them meet health-care expenses in 1963.

Northeast Iowa Clinical Conference

The Northeast Iowa Clinical Conference will be held in the Masonic Temple, in Waterloo, on October 15. The program is as follows:

9:30 a.m. "OFFICE TREATMENT OF PRECANCERS AND CANCERS OF THE SKIN"—Christian E. Radcliffe, M.D., professor of dermatology, S.U.I.

10:10 a.m. "THE TREATMENT OF FRACTURES IN CHILDREN"—Howard Sweeney, M.D., clinical professor of orthopedics, Northwestern University

11:15 a.m. "THE CLINICAL DIFFERENCES BETWEEN THE TWO HALVES OF THE COLON"—Manuel E. Lichtenstein, M.D., clinical professor of surgery, Northwestern University

2:00 p.m. "RECENT ADVANCES IN CARCINOMA OF THE CERVIX"—David G. Decker, M.D., member of the staff in the Section of Gynecology, Mayo Clinic

2:40 p.m. "THE ROLE OF THE GENERAL PRACTITIONER IN CONGENITAL HEART DISEASE"—J. W. DuShane, M.D., head of the Section of Pediatrics, Mayo Clinic

3:40 p.m. "TREATMENT OF DIABETES MELLITUS"—P. J. Palumbo, M.D., member of the staff in the Clinical Section of Metabolic Medicine, Mayo Clinic

DOCTORS' WIVES, PLEASE NOTE!

Ladies, you may feel free to attend any or all of the lectures and to visit the drug exhibits. The paper on childhood fractures may prove of special interest to you. The following have been planned for you:

9:00 a.m. to noon Coffee, at the Masonic Temple

1:00 p.m. Luncheon and Style Show, at the President Hotel

It's your professional privilege to replenish your ranks...

Give to medical education through AMA-ERF

AMA-ERF

American Medical Association
Education and Research Foundation
535 N. Dearborn St., Chicago 10, Illinois

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

Statement of Policy Regarding Gamma Globulin Distribution

All gamma globulin received by the State Department of Health is from the American Red Cross. That gamma globulin is allocated by the American Red Cross quarterly to all states in the United States. The amounts received are very small. The State of Iowa no longer receives amounts sufficient for us to furnish it to physicians for routine modification or prevention of cases of red measles. Furthermore, we can no longer supply it for community school use for prophylaxis against infectious hepatitis.

We can distribute it to physicians only for *indigent or medical hardship persons who have been directly exposed to known cases in infectious hepatitis, red measles or German measles.* We find that the amounts we receive quarterly are adequate if we restrict distribution in the following manner:

1. For such persons exposed to *measles,* restrictions are further made to the extent that the persons should be children under 2, or older children who are suffering from some debilitating condition, such as rheumatic fever or diabetes, or have recently recovered from a severe illness.

   DOSAGE: Prevention, 0.1 cc per pound of body weight.

2. Distribution is limited to very close or family contacts of a diagnosed case of *infectious hepatitis.* There are no age restrictions for eligibility for we know that the adult is more likely to have a severe case than the small child.

   DOSAGE: Recommended dosage scales vary from 0.01 cc to 0.03 cc per pound of body weight, with maximum dosage of 4 cc. This would mean that any adult over 130 pounds would receive a 4 cc injection. We prefer a median range with a minimum dose of not less than 1 cc and a maximum of 3 cc. With this dosage, clinical cases will not develop unless they were in the very last days of the incubation period when the gamma globulin was given.

3. For such persons exposed to *German measles,* distribution is limited to use for pregnant women in their first trimester of pregnancy.

   DOSAGE: The majority of carefully studied research reports indicate dosages of less than 20 cc are likely to be ineffective. Recommended: 20 to 30 cc.

Supplies are no longer large enough to permit us to use the depot distribution system. We do, however, attempt to keep a small supply in our Regional Health Offices. Physicians may procure the gamma globulin either from their Regional Health Office or from us at the State Department of Health.

No gamma globulin is currently available from the State Department of Health for poliomyelitis prophylaxis.

Specimens for Rabies Examination

The Iowa Veterinary Medical Diagnostic Laboratory at Ames and the Iowa State Hygienic Laboratory at Iowa City are the only two laboratories in Iowa that routinely examine animal specimens for the presence of rabies. These laboratories utilize the same laboratory procedures in the examination of each specimen, and frequently submit reference specimens to each other for control purposes.

The laboratories have prepared the following DON'T LIST which will provide guidance to anyone submitting a suspect specimen for examination:

1. Don't shoot or club the suspect specimen in the head. The animal's brain must be intact for proper laboratory examination.
2. Don't send the whole carcass to the laboratory. The intact head is all that is needed for examination. The State Hygienic Laboratory, particularly, does not have suitable facilities for the disposal of larger animal carcasses.
3. Don't fail to pack the head in ice immediately. Brain tissue rapidly decomposes, particularly in summer months if not properly refrigerated.
4. Don't freeze the specimen.
5. With the specimen, don't fail to include information concerning the exposure, whether or not a person has been bitten, and the name of the physician or veterinarian to whom the laboratory report is to be submitted.
6. Don't use the Iowa Highway Patrol as a delivery service unless it is an absolute emergency.

The only genuine emergency is an instance when a person has been bitten by a rabies suspect animal. Biting means the penetration of the skin by the teeth of the suspected animal. Bites about the head and neck, or multiple and/or extensive bites elsewhere constitute an emergency. Salivary exposure without a bite is not considered an emergency.

7. Don't submit live animals for examination. The laboratories do not have facilities for this service. If the animal is alive and appears healthy ten (10) days after the biting, he himself has indicated he did not have rabies at the time the biting incident occurred.

8. Don't send specimens to the laboratory by mail. Since the U. S. Post Office refuses to handle rabies specimens, they must be shipped by Railway Express, but it is preferable for the person or persons involved to deliver the head directly to the laboratory themselves. Determine the time required for transportation to the laboratory, and make certain that sufficient ice is used to provide refrigeration during shipment. Bus transportation may also be used, but the sender must include taxi fare to cover delivery of the specimen from the bus depot to the laboratory. In Ames, the taxi fare is $1.10, and in Iowa City, the fare is $0.75.

9. Don't send specimens to the laboratory C.O.D. They will not be accepted.

10. When available, don't fail to include with the specimen, a complete history of the animal, including vaccination, clinical signs, duration of illness and any postmortem findings.

Both laboratories are interested in providing the best and most rapid rabies diagnosis. They will be helped immeasurably if the above few "DON'TS" are followed.

Training Course for Sanitarians

A training course for sanitarians entitled, "Principles of Epidemiology," will be held October 19-23, 1964, at the Holiday Inn South, in Des Moines.

Open to milk, food or environmental sanitarians employed by local health departments, the course is designed to develop a better understanding of the causes and control of diseases transmitted by food, water, insects and animals, such as salmonellosis, hepatitis, rabies, encephalitis and chemical poisoning.

The course is presented by the Iowa State Department of Health, the Des Moines-Polk County Health Department and the Iowa Association of Health Officers, in cooperation with the Communicable Disease Center of the U. S. Public Health Service.

Lecturers include representatives of the Public Health Service Communicable Disease Center, Atlanta, Georgia, the Public Health Service Region VI, Kansas City, and the Iowa State Department of Health.

X-Ray Screening Film Reference File for Physicians

The Division of Tuberculosis Control of the Iowa State Department of Health announces that the Reference File of X-ray Screening Films has been extended through the cooperating efforts of the Iowa Thoracic Society and the Iowa Tuberculosis and Health Association. It will now include all miniature 70 mm. chest films taken in the state-operated mobile x-ray program since the beginning of the calendar year 1961.

The standard 14 x 17 chest films taken as a part of the activities of the Tuberculosis Control Division dating as far back as 1937 have always been available to physicians. Because of the request of the Iowa Thoracic Society, the miniature films taken since January 1, 1961, are also available. Physicians' requests for these films may be sent either to the Tuberculosis Control Division, Iowa State Department of Health, State Office Building, Des Moines, Iowa 50319, or to the Iowa Tuberculosis and Health Association, 1818 High Street, Des Moines, Iowa 50309.

Films taken by the Polk County Tuberculosis and Health Association mobile unit since 1947 are also available for reference purposes. Requests for Polk County films may be addressed to the State Department of Health or to the Polk County Tuberculosis and Health Association, 522 Flynn Building, Des Moines, Iowa 50309.

Breakthrough Reported In Search for Hepatitis Vaccine

A barrier to successful investigation of viral hepatitis, and to the development of a hepatitis vaccine, may be toppling. The first animal susceptible to the disease—a west African monkey—has been identified by researchers at Tulane University's Delta Regional Primate Research Center.

Advanced hepatitis research, including research aimed at development of a vaccine, has progressed nearly as far as it can without animal experimentation. Although some work has been done with human volunteers, human beings are not available in the numbers needed, and they cannot be subjected to the rigorous experiments needed in the development and testing of a vaccine.

According to one investigator, U. S. servicemen on duty in Vietnam, where hepatitis is endemic, run about the same high risk of hepatitis and consequent liver damage as do volunteers in this country who are given doses of pure hepatitis virus. Both military and civilian personnel there are receiving prophylactic gamma globulin, but the Armed Services are particularly interested in speeding the development of an effective vaccine.

The seven-year epidemic cycle of infectious hepatitis is presently at its nadir in this country. The

last peak was in 1960-1961. If the cycle follows a pattern set in recent years, the next peak could become the worst U. S. epidemic yet. In 1953-1954 the attack rate was 29.3 persons per 100,000; in 1960-1961 it was 35.8.

No one is predicting that a vaccine can be developed. The hepatitis viruses have been consistently tough to deal with in the laboratory, and problems associated with production and handling of vaccines are likely to be enormous. In addition, investigators aren't sure whether a vaccine would work, or what virus strains it should be designed to combat.

One of the other research areas is the investigation of hepatitis epidemics. In this country and in England, the few full-scale epidemiologic studies carried out thus far indict the virus strain AR-17. Looking ahead to the day when hepatitis vaccines may be produced, Dr. Joseph D. Boggs, of Northwestern University Medical School, says that a soldier vaccinated against strains prevalent in the U. S. might not be protected against hepatitis in the Far East. He is currently testing strains recovered from American troops in Korea on a group of prisoner volunteers in Joliet, Illinois.

Booklet for Nurses

A new guide for public health nurses visiting patients in their homes, "How to Study Patient Progress," was released September 4 by the USPHS. The new method of studying and reporting patient progress was first developed in 1961 and has thus far been tested by 40 public and private agencies in 11 states and the District of Columbia.

"This method is unique because it departs from the traditional numerical accounting of nursing visits," Surgeon General Luther L. Terry said. "It emphasizes continual assessment of patients' health needs while providing nurses with a ready means of documenting changes in the health status of their patients. The findings provide health agencies with such vital information as the scope of health needs of patients and their families, the kinds of health resources which communities need to develop or expand, the progress made by families in meeting their own needs, and the extent to which chronically ill and disabled persons can learn to care for themselves," the Surgeon General explained.

Although the method was developed primarily to help public health agencies to improve their nursing services, "it will be useful also for training nursing students to observe their patients more keenly and to plan for them more competently," Dr. Terry said.

"How to Study Patient Progress" (PHS Publication No. 1169) was written by Doris E. Roberts and Helen H. Hudson, staff members of the PHS Division of Nursing. Its 121 pages tell how to study activities and how to collect and record data. The booklet includes sample record forms, as well as statistical procedures and codes for tabulating study findings.

The booklet is available at 75 cents a copy from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Further information may be obtained from the Division of Nursing, Public Health Service, U. S. Department of Health, Education, and Welfare, Washington 25, D. C.

Morbidity Report for Month of August, 1964

Diseases	1964 Aug.	1964 July	1963 Aug.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	116	124	104	Jefferson, Johnson
Typhoid fever	1	0	0	Jasper
Smallpox	0	0	0	
Measles	91	55	26	Cherokee, Dubuque
Whooping cough	12	12	30	Des Moines, Scott
Brucellosis	15	14	13	Dubuque, Fremont, Scott
Chickenpox	34	63	17	Dubuque, Scott
Meningococcic meningitis	0	0	1	
Mumps	136	181	101	Clay, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	31	6	22	Clay, Muscatine, Scott
Rabies in animals	43	47	27	Cerro Gordo, Clayton, Kossuth
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	35	23	58	For the State
Syphilis	90	89	99	For the State
Gonorrhea	199	106	168	For the State
Histoplasmosis	2	1	6	Muscatine, Polk
Food intoxication	12	0	0	Marshall
Meningitis (type unspecified)	1	3	1	Clinton
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	1	0	
Salmonellosis	18	2	8	Clay
Tetanus	0	1	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	3	2	0	Cedar, Clay, Jones
H. influenzal meningitis	0	1	0	
Amebiasis	3	0	1	Boone, Polk
Shigellosis	2	3	2	Des Moines, Polk
Influenza	1	2	0	Polk

Woman's Auxiliary News

Iowa Medical Society Fall Conference

Members of the Board of Directors to the Woman's Auxiliary to IMS were privileged to attend the IMS Fall Conference for County Medical Society Officers and Other Representatives, in Des Moines September 13. It was a most inspiring and informative meeting.

Highlights of the program included addresses by Otis D. Wolfe, M.D., president of the IMS; Donovan F. Ward, M.D., president of the AMA; Walter H. Judd, M.D., former U. S. Representative from Minnesota; Robert B. Throckmorton, general counsel of the AMA; Joseph Boyle, M.D., Los Angeles, California; and Dr. Carl Byers, a member of speakers staff of General Motors Corporation.

In the opening address, Dr. Wolfe defined the purpose of the Fall Conference as an opportunity to correlate the activities of the State and County Medical Societies, and to bridge the gap between annual meetings of the Society.

To aid his hearers in understanding the predicament of the physician and of all other citizens, Dr. Wolfe briefly reviewed conflicting theories about the worth of individual man and the degrees of freedom to which he is entitled. This excellent review will be made available upon request. We strongly recommend that you make a point to read Dr. Wolfe's message.

The following Auxiliary representatives have prepared detailed reports on the topics presented: Mesdames J. F. Bishop, R. E. Hines, J. F. Throckmorton, N. W. Irving, Jr., R. F. Nielsen, D. C. Wirtz, and H. G. Ellis. These reports will be sent to your county presidents for presentation at forthcoming local Auxiliary meetings.

AMA-ERF Fund Raising Projects

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Note Paper
Playing Cards

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Woman's Auxiliary Office
529-36th Street, Des Moines 50312

1964 Conference Woman's Auxiliary to the American Medical Association

Your president Mrs. Howard Ellis and your president-elect Mrs. Henry Boe are representing the Iowa Auxiliary at the National Conference for presidents, presidents-elect, national officers, directors and committee chairmen. The conference is being held at the Drake Hotel, Chicago, October 4-7.

The meeting opens on Sunday afternoon. Some of the highlights of the conference are: guest speaker The Honorable Everett M. Dirksen, U. S. Senator, Illinois; a speech seminar sponsored by Smith, Kline and French by Robert Haakenson, Ph.D., director S.K.F. Speech Training Program; A Leadership Training Program panel moderated by Mrs. J. M. Chenault with the topic "She Who Dares to *Lead* Must Choose to Learn." Other topics of interest are: "This Is The Year That Was" (Legislation); a "Miss AMA-ERF" pageant; Community Service is Everybody's Business, with demonstration projects titled "On the Street Where You Live"; Guest Speaker—Donovan F. Ward, president of the American Medical Association, whose topic is "What's Going on Here."

A new film "Not As It Was" in color produced by AMA showing how doctors, as members of their local medical society and the AMA, have been able to bring better health care to both individual patients and their communities will be shown to the group on Wednesday morning. You will be hearing more about this.

These sections of the program, as well as the presentations on medicine and religion, AMA health education materials, the new BULLETIN and the group discussions will be brought to you in future issues or as special bulletins from time to time.

Auxiliary Activities Around the Hawkeye State

Black Hawk County

The Black Hawk County Auxiliary opened its fall season with a picnic dinner at the home of Mrs. R. F. Nielsen, 919 Washington Street, Cedar Falls. Assisting hostesses were Mmes. Robert

Bremner, Edward Ceilley, David Hansen and Robert Blue.

Mrs. Helen Mae Sulentic of Cedar Falls was the guest speaker. She is owner and operator of L'Atelier-Galerie. Mrs. Sulentic gave a history of the gallery, and the Auxiliary members visited it following her talk.

Boone County*

In brief, the Boone County Auxiliary activities for 1964 are as follows:

The Auxiliary sponsors the Essay Contest for all high schools of the county. This year the Medical Society's prize money was supplemented by equal amounts from the Boone County Bar Association, the Boone State Bank and the Citizens National Bank, and the Iowa Light and Power Company, for a total of $150.00. Undoubtedly because of this, there were a record number of entries, 38. For the fourth consecutive year, we had a state winner, Marietta Moravetz, of Ogden, who placed second in the state and eighth in the national contest. We believe the reading the students do in preparing their essays is of real value in showing them the relative advantages and disadvantages of free enterprise and government control. We find that most of the schools are cooperative, especially if the heads of the English departments are approached early in the school year when topics for required research projects are being chosen.

We continue to sponsor the Health Careers Club of Boone High School, and find that a very satisfactory percentage of its members subsequently go into nursing or allied health fields, after graduation. We have been fortunate in having had interested school nurses to help in keeping the club active. We are especially interested in HELF, perhaps because several local girls have received, and are now getting, financial help for nurses' training from that Loan Fund. We contribute $1.00 per capita each year, use it for memorials, and support the benefit dance at the time of the annual state meeting. Our biennial tea for all 11th and 12th grade girls of the county who are interested in health careers was held in October, 1963, and will be a part of next year's activities.

We have supported AMA-ERF with the purchase of stationery and plan to use the Medallion Christmas Card sales for additional revenue.

Our meetings usually include an informative program. We have used speakers from various departments of our hospital, the director of special education for the Boone schools, telling of the work being done with the educable mentally retarded children, and this year we know our efforts —and interests—*must* center on legislative problems, including the ever-present Medicare bill, and the coming state and national elections.

An evening we always enjoy and to which we look forward is our annual picnic with the medical society in the fall.

As we are a small Auxiliary (though we have 100 per cent membership!), we concentrate on a small number of projects, trying to do only the ones which are *not* being done by other organizations or which can be done more effectively by a medically associated group. We enjoy the sociability, but agree that the Auxiliary should never become "just another club."

—MRS. H. W. LONGWORTH, *President*

Cerro Gordo County*

Our Auxiliary has been organized for three years, and we feel we are well on the way to becoming an interested and enthusiastic group.

Last year we started our activities with a progressive, "get-acquainted" dinner, meeting at three different homes. After our dessert, we put together our programs and became familiar with plans for our future meetings. In October, we entertained our "Future Nurses" with a coke party and an enthusiastic talk by the superintendent of nurses from one of our local hospitals, followed by a question and answer period. We have an active Future Nurses Club in our local high school, and we are happy to do what we can to encourage the members of it. They, in turn, are grateful and appreciative for our help and interest.

Cerro Gordo County is recognized for its very fine North Iowa Mental Health Center. Its new building was completed and dedicated this past year. We had an Auxiliary program during which the director of the Mental Health Center spoke, and we visited the Center and became acquainted with its facilities and activities.

A speaker from our local Farm Bureau Woman's Organization proved most informative. It was good to hear the Farm Bureau expressing gratitude to our doctors and to the medical profession as a whole for the help which the farmer and his family receive in preventive medicine and in helping prevent rural accidents.

We not only contributed to AMA-ERF but also raised money for that fund through the sale of the stationery. We also contributed $25 to the local chapter of the American Red Cross specifically for use in the organization and supervision of the handicraft program for county home patients.

Of course we had a "just for fun" evening, complete with a real gypsy fortune teller and good food. We wound up the year with a guest luncheon and bridge party, and one very pleasant evening at the lake home of one of our members for a grand old picnic.

In September we were entertained at dinner by our husbands at their county medical society meeting—Dr. Arthur Long, acting director of the State Department of Health, was the speaker.

October, the beginning of our new year, will bring us a visit from our state president, Mrs. Howard G. Ellis. We have plans for an active

* These reports were presented by county presidents who attended the July WA-IMS Board Meeting.

program for the coming year, and hope to double our membership.

—MRS. C. O. ADAMS, *President*

Mahaska County

Mahaska County Auxiliary held its September meeting at Downing Hotel in Oskaloosa with Mrs. L. J. Grahek presiding. The year's projects were discussed and a report on the American Medical Association Education and Research Foundation was presented by Mrs. G. S. Atkinson.

Mrs. Keith Campbell, legislation chairman, gave her report and asked all "to be sure to vote" this coming election.

Mrs. Carmen Cannon and Mrs. Loren Allaman were guests of the Auxiliary at this luncheon meeting.

Polk County*

The Woman's Auxiliary of the Polk County Medical Society will carry out the following projects during the year 1964-1965:

Foreign Students Weekend: In this activity, members of the Auxiliary meet medically oriented foreign students at the Veterans Auditorium and transport them to a luncheon at the Kirkwood Hotel.

Homemaker Service: In the past we have made members act as organizers and sales ladies for the handicapped people who furnish the items to be sold. All proceeds go to the handicapped.

Homemakers Service: In the past we have made a donation of Auxiliary funds to this project. This service furnishes trained women as homemakers in certain situations.

Practical Nurses: The Auxiliary gives a tea for the graduating practical nurses.

Vision Screening: This activity is carried out by the Auxiliary members under the auspices of The Association for the Prevention of Blindness.

Voluntary Health Service Award: An outstanding voluntary woman health worker is chosen by the board of the Auxiliary. She is given special recognition at our Health Services Tea, and is awarded an appropriately inscribed charm.

Christmas Card Project: This is the Auxiliary's main source of income to carry on its service program and program of contributions. The Auxiliary mails a single master Christmas Card to each subscribing physician. The name of each subscriber is listed on the card.

Legislative Tea: This is a tea given to wives of the Iowa Legislators.

Mental Health Program: Every few years the Polk County Mental Health Association tries to reach the public with a series of programs. This year the organization plans to present short plays concerning mental health problems. It would like us to sponsor and participate in this proposed program along with other organizations.

Doctors' Day: Auxiliary members call on shut-in and retired physicians and present each with a carnation.

Health Career Clubs: (Formerly Future Nurses Clubs) The Auxiliary and its members actively support this high school activity. The Auxiliary sponsors a spring tea, at which time it presents Health Career Club pins to the high school club members.

Continuing Goal: Our continuing goal is 100 per cent membership, and increased meeting attendance.

—MRS. DANIEL W. COUGHLAN, *President*

Program Notes

Our Annual Meeting may seem a long way off, but plans are being formulated and ideas crystalized in an effort to bring you an outstanding program in April, 1965. We should appreciate contributions from individuals and/or Auxiliaries.

As your Program chairman, may I request each of you to be alert for popular and worthwhile programs and projects (in and out of Auxiliary) in your area. I'm sure that every Auxiliary has at least one good program or project that could be repeated at some other local point, adapted for State use, or be made an integral part of the Annual Meeting. Do communicate with us! We want to hear what you are doing.

We are planning a display of county yearbooks at our Annual Meeting. Has your program chairman sent us a copy of your yearbook? If you do not have a yearbook, we would appreciate having your meeting schedule.

The potential membership for the Iowa Medical Auxiliary is 2,400. We had 1,228 members for the year 1963-64. One of the goals of the National Auxiliary for 1964-65 is to double its membership. That goal will be realized if each of us enrolls one new member. In these days of over-organization, we shall need to demonstrate that the Auxiliary offers such excellent programs and worthwhile projects that membership is a cherished prize.

Being a doctor's wife makes you a community leader. Whenever you participate in any community endeavor, you are building the image of the medical profession. It is a full-time career, as you are well aware, and it contributes immeasurably to "Better Health—Better World."

—FRANCES HINES (MRS. RALPH E.)
Program and Yearbook Chairman

Have you moved in the past few months? PLEASE send any changes of address to 529-36th Street, Des Moines 12. Communication is a necessity: Do help us keep our mailing list up to date. You are our best source of accurate information.

The Supreme Effort

IT'S A TEMPTATION . . .
to give countless instances of "one vote counts." There are unbelievable examples in my files of how one vote made the difference between victory and defeat.
IT'S A TEMPTATION . . .
to try to persuade all of you to influence others to vote the right way.
IT'S A TEMPTATION . . .
to tell you the story of socialism in action in Denmark as we saw it.
IT'S A TEMPTATION . . .
to write lengthily, persuasively, about many political problems.

As your legislative chairman I shall resist TEMPTATION, and state directly and simply, the sole purpose of this article:

THE ELECTIONS ARE COMING . . .
COMING YOUR WAY.
BE SURE TO CAST YOUR OWN VOTE . . .
AND MAYBE OTHERS SWAY!

—LILLIAN NIELSEN (MRS. R. F.)
Legislative Chairman

Organized Medicine's Platform

The AMA, through its immediate past-president, Dr. Edward R. Annis, and Dr. R. B. Robbins, a member of its Council on Legislative Activities, made the following recommendations to the national political parties at their respective conventions this year:

1. Encouragement of the growth of private health insurance and prepayment plans.
2. An attack by government and civic groups on water and air pollution, ionizing radiation and other environmental health problems.
3. An accelerated program to overcome mental illness.
4. Intensified research and mass immunization programs to overcome communicable diseases.
5. A cooperative program to insure the training of enough doctors to meet future demands.
6. Retention of elderly citizens in their jobs and in the active life of the nation as long as they desire, to promote their dignity, productivity and self-respect.

Dr. Annis urged the political parties "not to yield to the temptation of seeming to offer something for nothing to try to win doubtful votes."

The Auxiliary's Pledge of Loyalty

"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."

Farm Bureau Summer Conference

The Iowa Farm Bureau Women's Summer Conference held its Vespers Service on Sunday, June 21, 1964, in the Pioneer Room at the Hotel Kirkwood. The theme of the Conference was "Partners for Progress."

Each participant built on the theme by showing that in this mobile, complex world we must each join our efforts with others to make them count.

Mrs. Marcus Aurelius, from Creston, was the speaker of the evening. Her topic was "Patterns for Partnership." She began by asking the question, "Who am I?" Her answer was, "I am a child of God." Her theme was that unless we build on a partnership with God, we build in vain. We must first gather knowledge through formal education, and then expand it through experience. If we assimilate our education and our experience we can form a conclusion of our own, rather than parrot some planned one.

A Social Hour followed the formal meeting.

—FRANCES HINES, *Second Vice President*

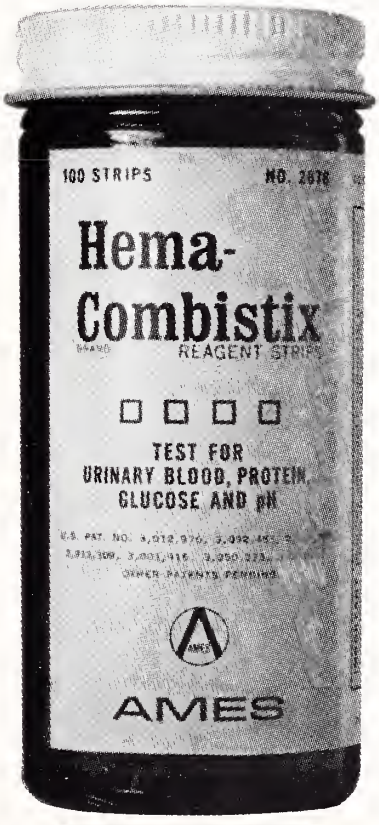
Community Service

The Polk County Medical Auxiliary furnished funds for a work evaluation and work-adjustment for slow-learners project just completed by the Polk County Association for Retarded Children and Goodwill Industries in Des Moines. Eight students, ranging in age from 18 to 28, participated in the six-week project in the Goodwill sheltered workshops. These students have been attending Slinker School in Des Moines.

These students having IQ's in the 50 to 71 range began with simple packaging tasks and later did subcontract work for business and industrial firms in the area. "The students displayed the ability to adjust to a sheltered work situation under structured conditions, and to work with other people," said Alan Mathiason, executive director of the Association. The workshop experience also showed that these students were capable of adjusting to an eight-hour work day, and that some of them were acceptable for sheltered employment now, and others possibly could be prepared for competitive employment.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

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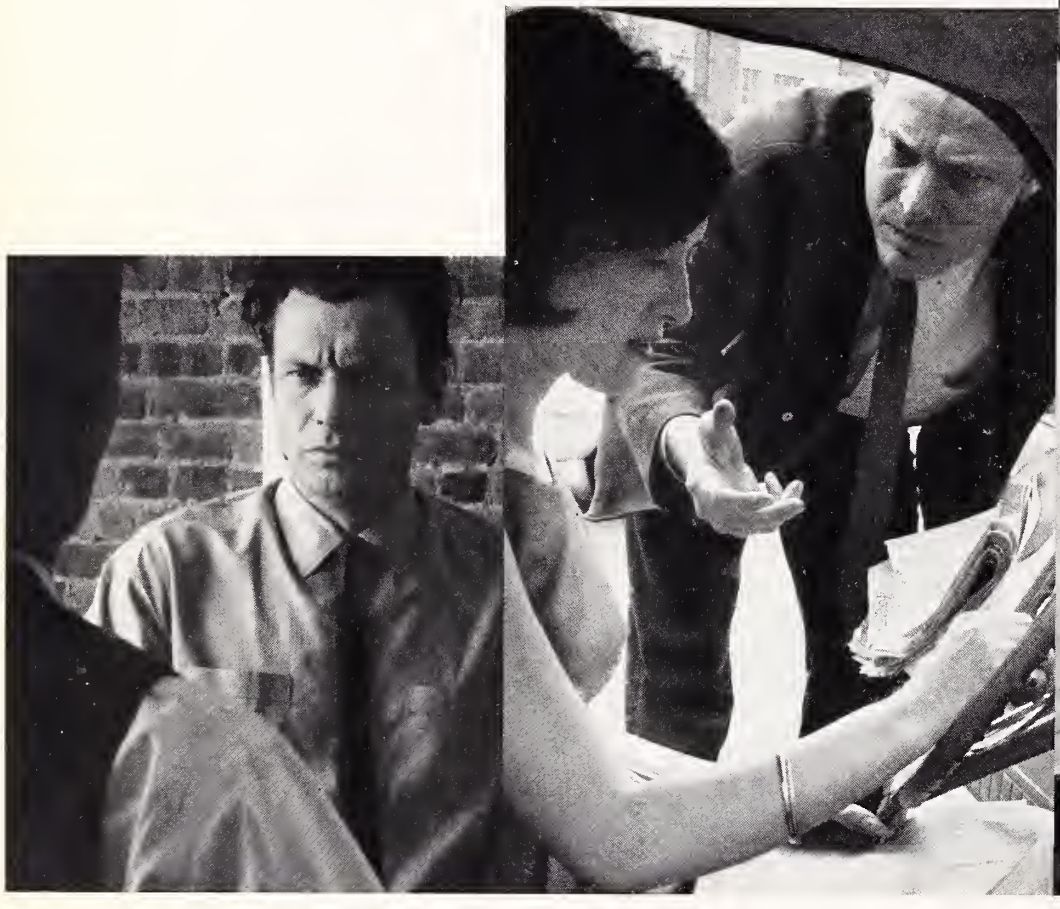
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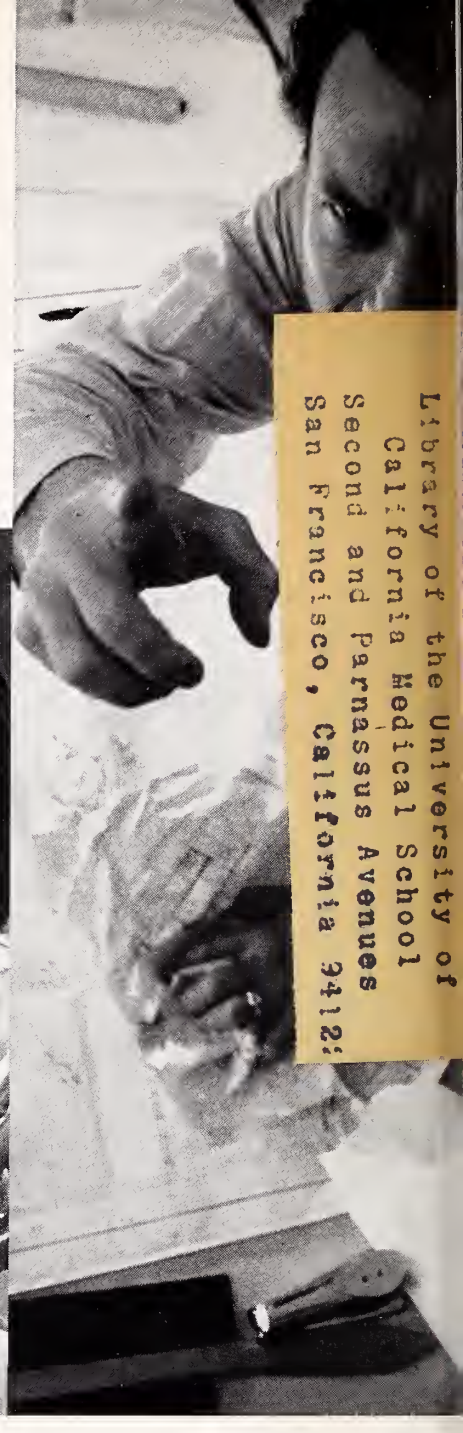
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Valium (diazepam) may also be useful in acute agitation due to alcohol withdrawal.

Valium (diazepam) may be of use to alleviate muscle spasm associated with cerebral palsy and athetosis.

Dosage and administration	*Usual daily dose*
Mild to moderate psychoneurotic reactions: Manifested by anxiety-tension alone or with depressive symptomatology, agitation, restlessness, psychophysiological disturbances	2 mg to 5 mg, 2 or 3 times daily
Severe psychoneurotic reactions: Where severe anxiety, fear, agitation, aggression or hostility exist alone or with depressive symptoms	5 mg to 10 mg, 3 or 4 times daily
Alcoholism: As an aid in symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis	10 mg, 3 or 4 times during the first 24 hours; reducing to 5 mg, 3 or 4 times daily as needed
Muscle spasm associated with cerebral palsy or athetosis	2 mg to 10 mg, 3 or 4 times daily

Contraindications: Valium (diazepam) is contraindicated in infants, patients with a history of convulsive disorders or patients with a history of glaucoma.

Warning: Valium (diazepam) is not of value in dealing with psychotic patients manifesting anxiety and should be avoided when there is reason to believe the patient is psychotic.

Precautions: In elderly or debilitated patients, it is important to limit the dosage to the smallest effective amount to preclude the development of ataxia or oversedation (not more than 1 mg, 1 or 2 times daily initially, to be increased gradually as needed and tolerated). As is true of all CNS-acting drugs, until the correct maintenance dosage is established, patients receiving Valium (diazepam) should be advised against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving an automobile during the period of Valium (diazepam) therapy is not recommended. In general, the concurrent administration of Valium (diazepam) and other psychotropic agents is not recommended. If such combination therapy is used, careful consideration should be given to the pharmacology of the agents to be employed with Valium (diazepam)—particularly with known compounds which may potentiate the action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants.

Since Valium (diazepam) has a central nervous system depressant effect, patients should be advised against the simultaneous ingestion of alcohol and other central nervous system depressant drugs during Valium (diazepam) therapy. Safe use of Valium (diazepam) during pregnancy has not been established. The usual precautions are indicated when Valium (diazepam) is used in the treatment of anxiety states where there is any evidence of impending depression; particularly the recognition that suicidal tendencies may be present and protective measures may be necessary. The usual precautions in treating patients with impaired renal or hepatic function should be observed.

Side effects: In clinical use, fatigue, drowsiness and ataxia have been reported, in most instances these are dose-related and may be avoided by proper dosage adjustment. Mild nausea and dizziness may occur on occasion. As with any new agent, when it is administered for protracted periods of time, periodic blood counts and liver function tests are advisable. Abrupt cessation after prolonged overdosage may, in some patients, produce withdrawal symptoms (*e.g.*, convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and Librium® (chlordiazepoxide HCl). Changes in EEG patterns have been observed in patients during and after Valium (diazepam) treatment.

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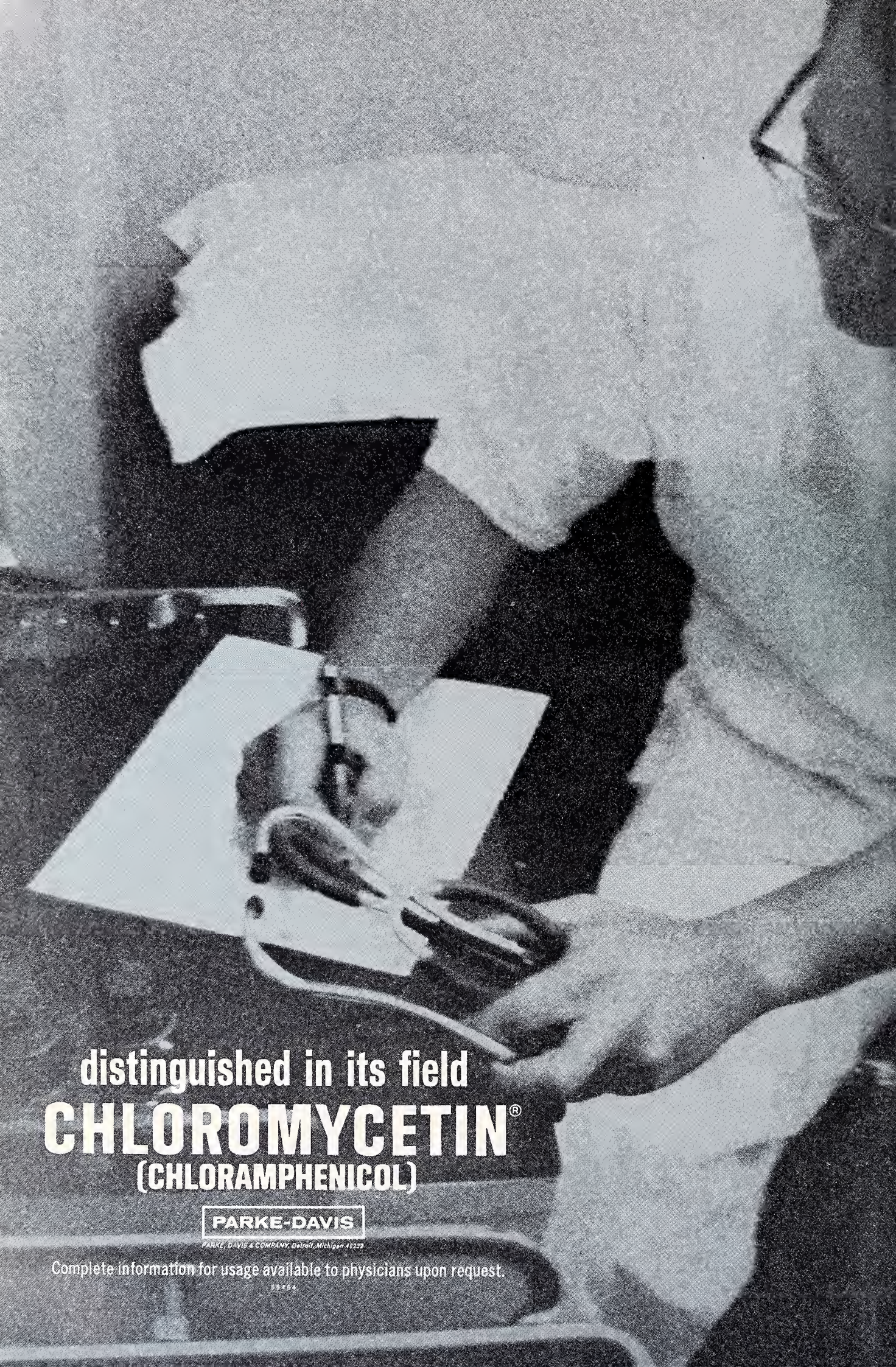
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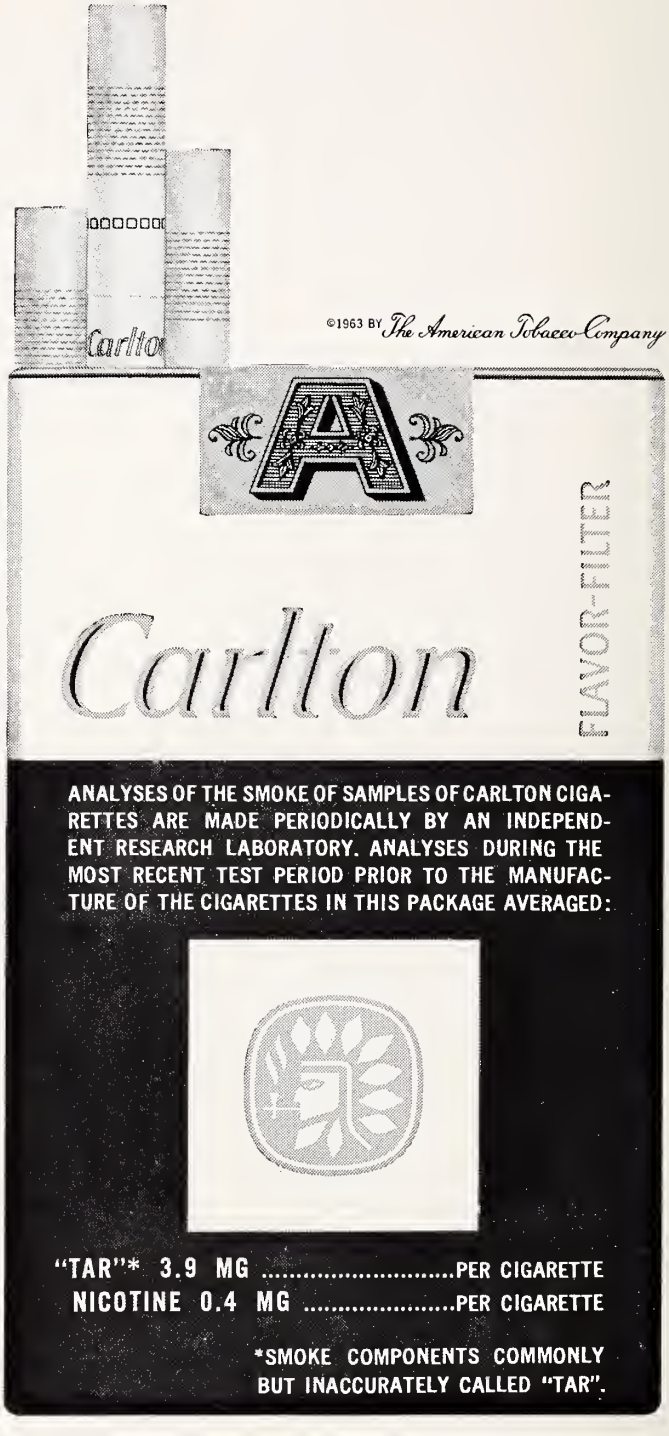
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Alcoholics, Alcoholism and Iowa Physicians

HAROLD A. MULFORD, Ph.D.
Iowa City

At least since the days of Dr. Benjamin Rush and Dr. Thomas Trotter, individual members of the medical profession, from time to time, have voiced the opinion that many persons who abuse alcohol suffer from a disease called alcoholism. In the early 1930's, Dr. D. W. Silkworth suggested that notion to Alcoholics Anonymous, and in 1951 the World Health Organization included that concept in its definition of alcoholism: ". . . any form of drinking which in its extent goes beyond the traditional customary 'dietary' use, or the ordinary compliance with the social drinking customs of the whole community concerned, irrespective of the etiological factors leading to such behavior and irrespective also of the extent to which such etiological factors are dependent upon heredity, constitution, or acquired physiopathological metabolic influences."[1]

THE AMA HAS CALLED ALCOHOLISM A DISEASE

In 1956, the House of Delegates of the American Medical Association approved a statement saying, in part: "Among the numerous personality disorders encountered in the general population, it has long been recognized that a vast number . . . are characterized by . . . excessive use of alcohol. All excessive users of alcohol are not diagnosed as alcoholics, but all alcoholics are excessive users. When, in addition to this excessive use, there are certain signs and symptoms of behavioral, personality and physical disorder or of their development, the syndrome of alcoholism is achieved. Intoxication and some of the other possible complications manifested in this syndrome often make treatment difficult. However, alcoholism must be regarded as within the purview of medical practice. The Council on Mental Health, its Committee on Alcoholism, and the profession in general recognize this syndrome of alcoholism as illness which justifiably should have the attention of physicians."[2]

The concept that alcoholism is a disease is not a new idea, but it is only during the past quarter century that it has been taken up and propagandized by the National Council on Alcoholism, Alcoholics Anonymous, and more recently by numerous other private and government agencies. Still, pronouncements and propaganda messages, regardless of how accurate they prove to be or how enthusiastically they are presented, hardly compensate for the fact that alcoholism remains poorly defined and little understood. Wexberg[3] has stated: "In no other area of research and social or medical endeavor have slogans so extensively replaced theoretical insight as a basis for therapeutic action, as in alcoholism. The emotional impact of the statement 'Alcoholism is a sickness' is such that very few people care to stop and think what it actually means."

Philp[4] has called attention to the murky thinking often evident in the educational messages of the proponents of the disease concept. After declaring that alcoholism is a disease, they then suggest that the alcoholic should consult his clergyman, Alcoholics Anonymous or some other nonmedical person or agency!

The AMA's declaration that alcoholism is an illness "within the purview of medical practice" obviously did not solve the alcoholism problem. Yet the late E. M. Jellinek[5] noted hopeful signs that acceptance of the concept will contribute to a solution for it. Physicians may thereby be encouraged to give more sympathetic attention to the alcoholic, and to acquire experience in treating acute intoxication and the various organic complications that alcoholics often suffer. Hospitals may be encouraged to accept alcoholics for treatment. Moreover, medical acceptance of the disease concept is fundamental to the subsidization of clinical activities and research work in the field of alcoholism, and it helps sustain the propaganda drives of the agencies concerned. In other words, if the spread of the disease concept draws alcoholics to the attention of researchers and clinicians, then we can hope that their investigations and clinical experiences will develop a more meaningful and useful definition of alcoholism and resolutions for some of the current scientific and medical controversies surrounding the alcoholic.

FEW PEOPLE REALLY ACCEPT THE DISEASE CONCEPT

With few exceptions, neither the alcoholics themselves, the professionals who might be expected to treat alcoholism, nor Americans generally are as yet entirely convinced that alcoholics

Dr. Mulford is director of alcoholism studies at the State Psychopathic Hospital, Iowa City.

are *really* sick people and deserve to be treated like other sick people. Studies show that although Iowans generally accept the illness concept, they remain convinced that the alcoholic is also morally weak and suffers principally from a lack of will power.[6,7]

One of the barriers to a wider acceptance of alcoholism as an illness, Jellinek[8] has suggested, is that its complexities are so great that it doesn't fit readily into the rigid frame of medicine. Since the disease has not yet been defined in terms of organic etiology, and since the orientation of the typical practicing physician is principally physiologic, it isn't surprising that physicians feel uncomfortable about diagnosing, much less treating alcoholism.

The difficulty of diagnosing alcoholism and the extra-medical factors that are involved were brought out in a recent study of 3,000 admissions at Massachusetts General Hospital.[9] The chief medical officers on duty in the emergency ward there were asked to assign all alcoholic patients to a special research project. After those men had selected 200, the research team, which included a physician with long experience with alcoholics, reviewed the records of all 3,000 admissions and identified an additional 238 alcoholics who had been "missed." The same medical records were, of course, available to both groups, and the only difference in procedure was that the medical officers had personal contact with the patient in each instance, whereas the researchers did not.

The researchers used the following criteria for alcoholism:[10]

I. Primary indices
  A. Previous diagnosis of alcoholism
  B. Alcohol on the breath
  C. Clinical evidence of intoxication
  D. Symptoms of alcohol withdrawal
  E. Presence of physical symptoms usually associated with "chronic alcoholism"
  F. Current employment status
II. Historical indices
  A. Heavy drinking for the past two years, both continued and sporadic ("Heavy drinking" designates drinking patterns that are in excess of those in the patient's socio-cultural group)
  B. Drinking that interfered with interpersonal relationships, as evidenced by (1) marital difficulties; (2) loss of nonfamily associations; (3) change in religious-group participation
  C. Alteration of employment status in association with drinking
  D. Departures from conformity, as evidenced by (1) arrest history; (2) driving history.

When the "missed" patients were compared with ones whom the Massachusetts General medical officers had recognized as alcoholics, it was found that the missed ones were more socially integrated; i.e., most of them were married, had families, were employed, etc. The researchers concluded that the chief medical officers perceived alcoholism as a disease mainly of skid-row derelicts.

The missed patients also differed from the assigned ones in certain medically relevant particulars. They had a high incidence of previous hospital admissions and had been hospitalized for longer periods of time. They were more likely to have come to the hospital on referral by a professional person or agency, and they had more medical-surgical complaints.

The investigators concluded that doctors usually arrive at the diagnosis of alcoholism by exclusion, and that unless the patient is socially disintegrated, any other possible diagnosis takes precedence in their minds. In other words, physical pathology, when present, dictates a diagnosis other than alcoholism. Even in the absence of physical pathology, the deviant drinker was unlikely to be diagnosed as an alcoholic unless he was socially disintegrated. From the physicians' point of view, the researchers decided, "The alcoholic who is medically ill and relatively intact socially is not an alcoholic."[11]

The dearth of knowledge and the difficulties of defining, diagnosing and treating *alcoholism* need not deter efforts to improve the present means of dealing with *alcoholics*. While waiting for scientists to arrive at a more useful definition of alcoholism, society must cope with a great many persons whose drinking and related behavior constitutes a social problem of considerable magnitude. Each day, the courts, police, AA members, social workers and clergymen, as well as physicians and others, apply the label "alcoholic" to many of these persons. (Studies are needed to discover the common characteristics of those who are so labeled, and the degree of consensus regarding criteria among those who do the labeling.) In any event, as a consequence of being branded "alcoholic," the individual receives harsh treatment from society. He is jailed, hospitalized, divorced, and in other ways given special and largely unwelcome attention. Quite apart from whether he suffers from the disease called alcoholism, and irrespective of the nature of that illness, he does need a medical examination, and probably some physical repair. The extent to which the average physician can be expected to go beyond those preliminary steps in treating him will be discussed later, but the physician can lead society in dealing with him in a more humane and efficient manner.

As a part of its ongoing research the Division of Alcoholism Studies at the State Psychopathic Hospital has recently studied Iowa's alcoholics as they are encountered and dealt with by the state's physicians. The aims of the study were to learn how many patients are diagnosed as alcoholics, how many are found to have drinking problems but are not so diagnosed, how many seek help for

drinking problem of a family member, what symptoms are employed in diagnosis, how many are treated for alcoholism *per se*, what referrals are made, and what the physicians' attitudes toward alcoholics are. These matters will be better understood if viewed against a broader background.*

IOWANS' DRINKING HABITS*

It can be roughly estimated that 50,000 (3 per cent) of Iowa's 1.7 million adults use beverage alcohol in a manner that renders them likely candidates for the label "alcoholic." The vast majority of the state's one million drinkers are not heavy users, and contribute little if anything to the alcoholism problem. About 85 per cent of them consume no more than two drinks a week. The remaining 15 per cent of the drinkers consume approximately three-fourths of all the beverage alcohol. But even so, most of these "heavy drinkers" are not alcoholics. The alcoholism problem is attributable to the excessive drinking of only about five per cent of all drinkers.

Incidentally, since these deviant drinkers—the five per cent who are alcoholics—probably contribute close to half of the state's revenue from the sale of beverage alcohol, they can be regarded as having prepaid their fees for any service the state might offer them.

The male-female ratio among alcoholics is 5 or 6 to 1. Although alcoholics are to be found in all parts of the state, proportionally more of them live in urban areas. From 80 to 85 per cent of them are married, have families and are employed. An estimated 3 to 10 per cent are skid-row derelicts or chronic police offenders.

ALCOHOLICS AS ENCOUNTERED BY IOWA PHYSICIANS

Questionnaires were mailed to all of the state's practicing physicians in 1956, and the results were published in this JOURNAL.[12] In 1959 and again late in 1963, similar questionnaires were mailed to a random sampling of the physicians. Here, we shall focus on the results of the 1963 study.

In the winter of 1963, a one-page questionnaire was mailed to a 20 per cent sample (or 453) of the state's medical doctors. In addition, it was mailed to each of the state's 95 psychiatrists. Since alcoholism is generally considered a form of mental disturbance, the psychiatrists' replies were analyzed separately and will be discussed later.

Of the 453 non-psychiatric physicians who received questionnaires, 253, or 56 per cent returned them. However, 93 of them provided little or no information. A number of specialists reported merely that their specialty practices tended to exclude alcoholics. In some instances the respondent had left the state, had retired or had died.

Completed questionnaires from 113 general practitioners, 8 internists and 39 other specialists were analyzed. Approximately three-fourths of the GP's and internists reported diagnosing one or more alcoholics each. The 92 who said they had had such patients had diagnosed a total of 1,043 cases. The average—about eight or nine cases for each doctor—is misleading because fewer than one-fifth of them had diagnosed 90 per cent of the total. Two GP's reported diagnosing 40 alcoholics each; one had diagnosed 51 cases; and one interne at Broadlawns-Polk County Hospital, Des Moines, reported having seen 400.

Because of the lack of consensus regarding a diagnosis of alcoholism, the physicians were asked to estimate the numbers of patients whom they judged to have drinking problems but whom they had not diagnosed as alcoholics. With few exceptions, the doctors who reported alcoholic patients also reported having seen one or more problem drinkers. The total of such people seen by GP's and internists was 2,219, or more than double the number actually diagnosed as alcoholics. One GP whose practice was mostly industrial reported having seen 500 problem drinkers, and the aforementioned interne reported seeing 700 of them. Again, most of the problem drinkers were reported by relatively few physicians. The seven doctors who reported seeing 50 or more, reported a total of 1,535 such cases. Thus about six per cent of the GP's and internists reported nearly three-fourths of the problem drinkers seen by physicians.

A total of 91 GP's and internists reported counseling 678 persons about the drinking behavior of a family member. Here again, relatively few doctors reported most of the cases. The six per cent of doctors who reported seeing 20 or more such people reported 44 per cent of all such individuals who were seen.

Although specialists other than internists and psychiatrists might not be expected to encounter many alcoholics in their practices, nearly one-fifth did report diagnosing one or more of them. Most of these specialists were surgeons. All together, these other specialists reported seeing a total of 158 alcoholics, but included among them was an ear, nose and throat specialist who reported having diagnosed 100 alcoholics. These specialists also reported having seen 354 problem drinkers and counseling 76 persons about the drinking problem of a family member.

It had been previously observed that "despite the pronounced emotional ramifications of alcoholism, most psychiatrists have been just as reluctant as their medical colleagues to become deeply involved in the treatment of alcoholic patients." Of the state's 95 psychiatrists, 29 completed and returned their questionnaires. Twenty-two (76 per cent) of those who responded reported seeing one or more alcoholics. Although the proportion of psychiatrists who had diagnosed cases of alco-

* Iowans' drinking habits and attitudes have been reported by Harold A. Mulford and D. E. Miller in a series of articles in QUARTERLY JOURNAL OF STUDIES ON ALCOHOL, beginning with the December, 1959, issue. The latest report can be found in the June, 1964, number.

holism was essentially the same as that of the GP's and internists, these 22 psychiatrists reported seeing 685 alcoholics. In addition, 23 of the psychiatrists had seen 632 problem drinkers, and 16 of them had counseled 285 people regarding the drinking problem of a family member. The one-fourth of the psychiatrists who had diagnosed more than 20 alcoholics each had seen 80 per cent of all the patients seen by these specialists.

In summary, about three-fourths of all physicians in the sample (excluding most specialists) annually diagnose one or more alcoholics. Only a few see more than 10 cases. All doctors in the sample saw a total of 1,886 alcoholics plus 3,205 problem drinkers, and in addition counseled 1,039 family members.

TREATMENT OF ALCOHOLISM PER SE

About 62 per cent of the responding GP's and internists reported treating alcoholism *per se*. Of the 92 GP's and internists who diagnosed any alcoholics, 75 reported treating 428 patients for alcoholism. This is 41 per cent of the cases diagnosed. Two-thirds of the alcoholics treated for alcoholism by GP's and internists were treated by only 12 per cent of these practitioners. Of the 22 psychiatrists who diagnosed a total of 685 alcoholics, 15 treated 422 patients for alcoholism. Five (17 per cent) treated 301 patients, or nearly three-fourths of the total. In addition, four specialists of other types reported treating a total of nine patients for alcoholism.

The 859 alcoholics treated for alcoholism represented 14 per cent of all alcoholics and problem drinkers whom the reporting physicians had encountered, or who had been brought to their attention by family members. They represented 17 per cent of all alcoholics and problem drinkers seen, and about 46 per cent of the total patients actually diagnosed as alcoholics.

When the responses were broken down by the number of years the physicians had been in practice, it was discovered that doctors who had been practicing five years or less had been more inclined to diagnose alcoholism and also to treat patients for it. This finding may indicate a trend toward greater acceptance of the alcoholic as a patient, and a trend away from the sentiments expressed by one retired practitioner. He described the alcoholic as a selfish, weak-willed introvert whose only desire is to have another chance to reform. The doctor went on to say that he once knew an alcoholic who had abused his family, etc. and who had been taken out by a vigilante committee, tied to a tree and severely horsewhipped. He drank no more, and behaved himself for years.

SYMPTOMS

When asked to list the symptoms by which they diagnosed alcoholism, a slight majority of the physicians indicated that they relied entirely upon behavioral patterns. Only 10 per cent said they based their diagnosis strictly on physical pathology. The remainder used one combination or another of behavioral, psychological and physical symptoms.

REFERRALS

Nearly half of the alcoholics seen by physicians were self-referrals. One-third had been referred by the police, and 19 per cent had been referred by relatives. A few had been referred by other physicians, by the AA or by other agencies.

Physicians generally employ other community resources in helping the alcoholic. Approximately two-thirds of the physicians and 83 per cent of the psychiatrists referred alcoholics to other agencies; and, respectively, they referred 53 per cent and 66 per cent of their cases. Nearly half of the GP's and internists referred 617 cases to AA. The next most popular agency was the hospital, followed by psychiatrists and mental health clinics.

TIME THAT PHYSICIANS DEVOTE TO ALCOHOLICS

A majority of the GP's and internists reported that they spend no more than one per cent of their time with alcoholics. However, three said that such patients occupy from six to 10 per cent of their time. Psychiatrists' estimates resembled those of the GP's, except that two of them reported devoting from 15 to 20 per cent of their time to alcoholics, and one, located at a State Mental Health Institute, reported working exclusively with them.

The doctors were asked to give brief descriptions of the types of treatment they employ. Of the 80 GP's and internists who answered that question, about one-fifth said they do not treat the condition, and five per cent said they merely refer the patient elsewhere. Another one-fifth provide only physical treatment—sedation, vitamins, etc. Most of the remainder said they provide counseling, although in some cases this appeared to consist of little more than urging the patient to quit drinking.

Approximately three-fourths of the GP's and internists who reported diagnosing any alcoholics thought the prognosis for such patients is poor; nearly one-third thought it fair; and only five per cent thought it good. Of the psychiatrists, only one thought the prognosis is good. Eight thought it fair, and 15 thought it poor.

PHYSICIANS' DEFINITIONS OF THE ALCOHOLIC

Less than half (45 per cent) of the GP's and internists, as compared with 79 per cent of the psychiatrists, defined the alcoholic as a sick person. More than one-third of the GP's and internists described him as *both* sick and weak-willed or morally weak. Seventeen (14 per cent) of the GP's, but only one psychiatrist, apparently rejected the illness concept and defined the alcoholic only in moral terms. Thus, more than half of the GP's and internists refuse the disease concept, or qualify it by insisting that the alcoholic is morally weak as

well as sick. Apparently the medical profession generally has the same attitude toward alcoholics as does the general population.[7]

Physicians were asked to comment on alcoholism as a medical problem, and to say how they felt about treating alcoholics in their own practices. Approximately three-fourths of the GP's and internists viewed alcoholism as a medical problem, but two-thirds of them viewed it as a problem for a medical specialty other than their own. Most of the remainder defined it as a social as well as a medical problem. One physician defined it only as a social problem, and four denied that it is any problem at all. Only about half of the psychiatrists viewed alcoholism as a medical problem for their own specialty.

DOCTOR'S IDEAS ABOUT THE ALCOHOLISM PROBLEM IN IOWA

Only five GP's and internists accepted the invitation to comment regarding Iowa's alcoholism problem, and they suggested more medical facilities for alcoholics. Four of the psychiatrists suggested that more research is needed.

It had been thought that each physician might be able to give a rough estimate of the number of alcoholics in his own community. However, the estimates, when converted into ratios for the doctor's cities or towns, varied from less than one per cent to as high as 34 per cent. Four psychiatrists in the same city gave estimates varying from 250 to 3,300. This lack of agreement suggests either that physicians are little aware of the problem, or that they differ greatly as regards who should be called an alcoholic.

DISCUSSION AND CONCLUSIONS

The reports from the physicians would take on more meaning if projections for the entire state could be based on them. Such was our original intent. Since a 20 per cent sample was employed, it is tempting to multiply the findings by five, and draw conclusions regarding all Iowa physicians. However, the sample actually obtained is undoubtedly biased, so that projections for the state would be inflated to some unknown degree. In the first place, though the percentage of completed and returned questionnaires was fairly high (55 per cent), it seems likely that the physicians most interested in alcoholics, and who therefore see more of them, are most likely to have responded. Second, it was impossible to control duplication. Undoubtedly some patients were seen by more than one doctor. Thus, estimates of the number of doctors in the state who see alcoholics, how many they see and what they do with them would constitute maximum values, and there would be no way of knowing the degree of inflation they represented.

Nevertheless, it does seem reasonable to conclude: (1) A majority of the GP's, internists and psychiatrists in Iowa encounter one or more alcoholics annually. (2) A very small portion of the physicians carry most of the load of alcoholics. (3) The "problem drinkers" who are not diagnosed as alcoholics far outnumber those who are so diagnosed. (4) Although presumably they are repaired physically, less than one half of the diagnosed alcoholics are treated for alcoholism *per se*. (5) Many physicians do not treat alcoholism, and although most of them refer alcoholics to other agencies for help, some do not. (6) A majority of the physicians either reject the disease concept of alcoholism, or accept it with the qualification that a moral component is also involved. (7) Those who perceive alcoholism as a medical problem are inclined to see it as a problem for a specialty other than their own. (8) A large majority of physicians believe that the prognosis for the alcoholic is poor. (9) Physicians generally have very little notion of the scope of the alcoholism problem in their respective communities.

Although these tentative conclusions must be tested through personal interviews with a random sample of Iowa physicians, it is interesting to note the comparability of the findings in this study and those in a study conducted by Hayman[14] of psychiatrists' attitudes toward alcoholism in southern California. "Half do not generally treat alcoholics," he summarized. "Over half reported no recoveries whatever, and 80 per cent of those with any success reported 10 per cent or fewer recoveries. Most advocated some form of psychotherapy despite their pessimism about its value. On the other hand, 99 per cent of them approved of Alcoholics Anonymous, 77 per cent having referred patients to AA. Of the patients they knew in AA, 40 per cent had been abstinent up to one year, 20 per cent for two years, and 10 per cent over two years, with about 50 per cent 'well adjusted'—certainly a much more positive statement than they made for their own work."[15]

Regardless of the eventual outcome of the current debate regarding the existence and nature of the disease "alcoholism," and in spite of the limits of current knowledge regarding symptoms, treatment and prevention of this presumed disease, the fact remains that Iowa has many so-called alcoholics. Iowa's 50,000 alcoholics constitute a sociomedical problem deserving the attention of her physicians.

The alcoholic has two basic and related needs that are deserving of the physician's attention. First, the alcoholic needs a physical examination, and in many instances physical repair will be indicated. Second, he needs help in quitting drinking and in learning to live without alcohol. The physician, of course, is especially qualified to attend to the first of these needs, and he can make a major contribution to the fulfilling of the second one. It seems, however, that most physicians feel they possess no special ability to go beyond the physical repair of the alcoholic, and that they would prefer not to treat him. Indeed, until fur-

ther research illuminates alcoholism as a medical disease falling within the physiologic orientation of most physicians, it may not be reasonable to expect the average physician to treat it.

The physician who has no sympathetic understanding of the essentially social and psychological pathology of the alcoholic and who would rather not counsel such patients should attend to their physical disabilities and then refer them somewhere else for counseling. He may find that there is a nearby AA group, a clergyman, a psychiatrist or a mental health center or hospital psychiatric ward that offers help to the alcoholic. Such agencies should refer alcoholics to him for medical attention, and he should refer alcoholics to them for counseling.

Where these resources are unavailable, the physician should help establish them. Since most alcoholics are employed, an ideal community program might be patterned after that of the Schield Bantam Company, in Waverly. There, an alcoholism counselor is employed by the company. He detects cases of alcoholism among the workers, refers them to physicians for medical attention, counsels them about their drinking problems, and where possible gets AA to help them.

If the physician can overcome his organic-disease bias and can cast aside his preconception of the alcoholic as a skid-row bum, he is in a strategic position to lead in the detection of incipient alcoholics. It would be unfortunate if the disease concept of alcoholism were ever pushed to the point where non-medical persons such as AA members were excluded from working with alcoholics, but the major immediate need is for physicians to learn to recognize and treat alcoholism as social and psychological as well as physiologic pathology.

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Tumors of the Nervous System

A postgraduate conference on Tumors of the Nervous System will be held in the auditorium at Iowa Methodist Hospital, Des Moines, on Wednesday, December 2, 1964, under the sponsorship of the S.U.I. College of Medicine and Iowa Methodist, Iowa Lutheran, Mercy and Broadlawns-Polk County Hospitals. The fee will be $10, and the program is accredited for 6½ hrs. by the American Academy of General Practice.

This conference on tumors of the central and peripheral nervous system has been carefully planned to explore the subject in depth. It will stress clinical diagnosis as well as recent developments in therapy. All physicians, regardless of their specialty, will find areas of direct application in their daily practice, and the program has been designed for the general practitioner as well as for the specialist.

9:05 a.m. "Gross and Fine Anatomy of the Nervous System"—Walter R. Ingram, Ph.D., head of anatomy at S.U.I.

9:30 a.m. "Pathology of Central Nervous System Tumors"—Orville T. Bailey, M.D., professor of neurology and neurologic surgery, University of Illinois

10:30 a.m. "Electroencephalography"—Robert J. Joynt, M.D., associate professor of neurology, S.U.I. College of Medicine

11:00 a.m. "Radiologic Diagnosis"—James T. McMillan, M.D., Des Moines

11:30 a.m. "Clinical Diagnosis"—Dr. Joynt

12:00 noon LUNCH

1:00 p.m. "Brain Scan Technics and Results"—Robert T. Morrison, M.D., research associate, S.U.I. College of Medicine

1:20 p.m. "Surgical Therapy"—Lyle A. French, M.D., head of neurosurgery, University of Minnesota

1:50 p.m. "Radiation Therapy"—Howard B. Latourette, M.D., professor of radiology, S.U.I. College of Medicine

2:40 p.m. "Tumors of the Peripheral Nervous System"—Dr. French

3:10 p.m. "Special Problems in Children"—John C. MacQueen, M.D., professor of pediatrics, S.U.I. College of Medicine

3:40 p.m. SYMPOSIUM ON NEUROBLASTOMAS—G. E. Perret, M.D., professor of surgery, S.U.I. College of Medicine, moderator
Dr. Bailey
Dr. French
James C. Taylor, M.D., assistant professor of pediatrics, S.U.I. College of Medicine

Scientific Articles

Community-Wide Cardiopulmonary Resuscitation

PETER SAFAR, M.D.
Pittsburgh, Pennsylvania

THE "NEW LOOK" of emergency resuscitation is now being accepted in an increasing number of communities. The degree of participation of every physician, no matter what his specialty may be, depends on his interest, his first-hand experience in resuscitation and related fields, and his availability to act as a member of a hospital resuscitation team, or as coordinator of hospital-wide or community-wide programs.[1]

The views to be presented are based on the experience that my associates and I have had in laboratory resuscitation research, in over 300 cardiopulmonary resuscitation attempts outside the operating rooms and in seven years of Intensive Care Unit work, and on the findings of other groups actively engaged in resuscitation research and practice. There have been several national and international symposium discussions during the past years,[2-6] which have succeeded in eliminating some of the past disagreements and in making recommendations concerning which technics are best and who should be taught.

The potential public-health impact of community-wide cardiopulmonary resuscitation programs should be considered. For instance, among the 1.7 million deaths which occurred in 1959 in the United States, approximately 700,000 were due to accidents and diseases that sometimes are reversible by prompt resuscitative efforts.[6] In the recent past there were about 90,000 accidental deaths per year, and 40,000 of those were due to highway accidents, in which injuries involving the head and thorax were the most common causes of death. Such injuries are often associated with respiratory distress requiring airway care and artificial ventilation on the scene and during transportation to the hospital. Approximately 6,000 deaths were due to drowning, and others were due to smoke inhalation, poisoning, gas inhalation, etc.

An error in anesthetic management was the primary or contributing factor in an estimated 10,000 surgical deaths per year.[6] Anesthesia-associated deaths in patients who pre-operatively had been in good physical condition were usually considered as preventable through the exercise of good judgment and skill. Therefore, *prevention* of anesthetic mishaps is a problem of improved training of anesthesia personnel and of better staffing with well-trained anesthesiologists. Once cardiac arrest occurs and *is treated,* death in the final analysis is due to inadequate resuscitation.

In the past years there were also approximately 1,000 maternal deaths annually from anesthesia or hemorrhage, and approximately 70,000 neonatal deaths. In addition, an unknown number of deaths were due to respiratory infections and other respiratory medical emergencies, such as status asthmaticus, status epilepticus and pulmonary edema.

There were about 500,000 deaths due to coronary disease every year. We may speculate that some of these valuable lives could have had a second chance if a considerable number of non-medical personnel throughout the country had known how to act at the right time. An unknown number of sudden deaths in patients with coronary disease

Dr. Safar, professor and chairman, Department of Anesthesiology, University of Pittsburgh, made this presentation at the Postgraduate Course on Cardiac and Respiratory Diseases, State University of Iowa College of Medicine, December 6, 1963.

are considered to be reversible, for they are caused by ventricular fibrillation in an otherwise viable myocardium.[7, 8] Beck's concept of "the heart too good to die"[8] has been proved correct by the successful reversal of over 42 coronary cardiac arrests outside operating rooms.[6] This series was collected from 12 authors who reported on over 800 cardiopulmonary resuscitation attempts outside of operating rooms. In most hospitals, less than 10 per cent of attempted resuscitations in coronary-occlusion deaths led to complete reversal and discharge of the patient. In our institution, six out of approximately 60 attempts were successful. At present, no good studies of long-term survival and morbidity of these successfully resuscitated patients are available. Reportedly, the initiation of cardiac resuscitation by bystanders or ambulance personnel outside of hospitals has, up to date, led to very poor salvage rates. Such reports should be reviewed and compiled. Medical instructors' time and energy spent in community-wide cardiac resuscitation programs should be evaluated in relation to the portions of their time and energy thus distracted away from salvable hospital patients.

EMERGENCY CARE

A public health approach to resuscitation will require improved comprehensive community-wide emergency care organization which is more resuscitation-oriented than at present. This should include all three aspects of emergency care, namely, (a) first-aid training of the public at large; (b) ambulance organization; and (c) hospital emergency room coverage around the clock by physicians experienced in resuscitation. It should include the establishment of minimal standards for personnel training and equipment in ambulance care, and a central ambulance-dispatching system.

CARDIAC MONITORING WARD

What can be done in hospitals to save patients from coronary-occlusion deaths? Cardiac monitoring wards seem promising because patients who were not in need of intensive care on admission—indeed some of them were even ambulatory—have been found dead in their hospital rooms when the nurse made her routine rounds. Obviously, the resuscitation team arrived too late. Therefore, when cardiac patients are admitted to the hospital, a telemonitor can transmit, for instance, the EKG (and in the future, we hope, other parameters) to a screening center in the nursing station. An automatic electric alarm system, triggered by ventricular fibrillation, asystole, or excessive bradycardia can be screened by the nurse to avoid false alarms. She can then call the emergency team to the scene within seconds. Television and personal surveillance should be added.

TEACHING

The recognition of the superiority of head tilt and mouth-to-mouth ventilation over manual ventilation[9-11, 2] and the clinical introduction of external cardiac compression[12] has led to the enthusiastic initiation of resuscitation-training programs for paramedical and lay personnel. Unfortunately, experience has shown that a great number of physicians are still unknowledgeable and unskilled in these emergency measures. Physicians are mistaken if they assume that knowledge of the literature makes them capable of resuscitating effectively. Resuscitation is not only a science, but is primarily an art which can be acquired only by extensive first-hand experience.

Medical schools are gradually developing training programs in resuscitation, mostly under the direction of departments of anesthesiology. But how can those physicians who had their training in the "old days" learn skillfully and promptly to apply methods they have never practiced? Experience has shown that physicians can be quite effective in actual resuscitations if they have had a course that included not only the viewing of training films, listening to lectures and watching demonstrations, but also actual practice exercises on manikins and dogs. For instance, a compact 2½ hour course for physicians on Phases I and II of resuscitation was designed by our group. Similar courses are being conducted elsewhere. Airway maintenance and artificial ventilation are best learned by assigning the physician full time for a short period to an anesthesiology department.

Mouth-to-mouth ventilation has been accepted as part of first-aid, and its teachability has been proved.[5] In contrast, external cardiac compression has not been accepted officially as a first-aid procedure. Incorrect and unnecessary application of mouth-to-mouth ventilation is unlikely to do harm, but external cardiac compression may produce unnecessary and potentially lethal injuries. This makes the diagnosing of pulselessness by laymen a major issue. Experience should be gathered of cardiac resuscitation programs for paramedical personnel conducted throughout the United States. Winchell showed in a controlled teachability study of 971 lay personnel that failure rates among trainees were extremely high unless training included high motivation by student and instructor, manikin practice, repetition, simplicity, and uniformity of the details of technics to be taught.[13]

STEPS OF CARDIOPULMONARY RESUSCITATION

For easier teaching and learning, we have divided the steps of emergency resuscitation according to the alphabet[1, 6] (Figure 1).

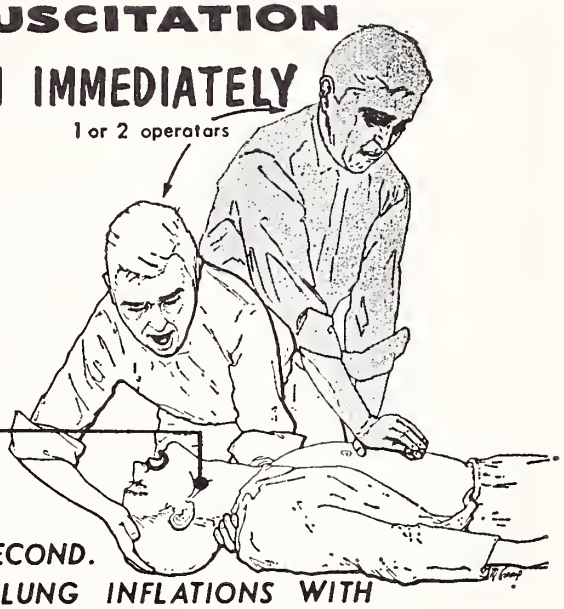
Phase I (A,B,C) is designed to re-oxygenate the brain within seconds: Airway, Breathe, and Circulate.

Phase II (D,E,F) is designed to restart spontaneous circulation within minutes: Drugs, Electrocardiography and defibrillation, and Fluids (or Drugs, Electrocardiography, and Fibrillation treatment).

Phase III (G,H,I) is long-term resuscitation:

HEART-LUNG RESUSCITATION

I FIRST AID: OXYGENATE THE BRAIN IMMEDIATELY



IF UNCONSCIOUS

Airway - *TILT HEAD BACK*

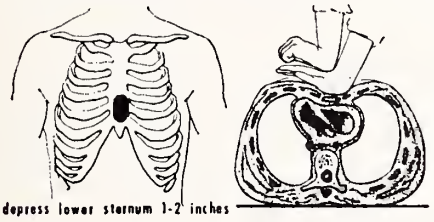
IF NOT BREATHING

Breathe - *INFLATE LUNGS 3-5 TIMES, MAINTAIN HEAD TILT*

MOUTH-TO-MOUTH, MOUTH-TO-NOSE, mauth-to-adjunct, bag-mask

- FEEL PULSE
- IF PRESENT - CONTINUE LUNG INFLATIONS
- IF ABSENT -

Circulate - *COMPRESS HEART ONCE A SECOND. ALTERNATE 2-3 LUNG INFLATIONS WITH 15 STERNAL COMPRESSIONS UNTIL SPONTANEOUS PULSE RETURNS.*



for physicians only

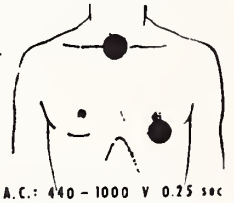
II START SPONTANEOUS CIRCULATION

Drugs - *EPINEPHRINE:* 1.0 mg (1.0 CC OF 1:1000) I.V. OR 0.5 mg INTRACARDIAC. REPEAT LARGER DOSE IF NECESSARY

SODIUM BICARBONATE: APPROXIMATELY 3.75 G/50 CC (1/2 DOSE IN CHILDREN) I.V. REPEAT EVERY 5 MINUTES IF NECESSARY

E. K. G. - • *FIBRILLATION:* EXTERNAL ELECTRIC DEFIBRILLATION. REPEAT SHOCK EVERY 1-3 MINUTES UNTIL FIBRILLATION REVERSED

• *IF ASYSTOLE OR WEAK BEATS:* EPINEPHRINE OR CALCIUM I.V.



Fluids - *I.V. PLASMA, DEXTRAN, SALINE*

Do not interrupt cardiac compressions and ventilation. Tracheal intubation only when necessary.

AFTER RETURN OF SPONTANEOUS CIRCULATION USE VASOPRESSORS AS NEEDED, e.g. NOREPINEPHRINE (Levophed) I.V. DRIP

III SUPPORT RECOVERY (physician-specialist)

Gauge *EVALUATE AND TREAT CAUSE OF ARREST*

Hypothermia *START WITHIN 30 MINUTES IF NO SIGN OF CNS RECOVERY*

Intensive Care *SUPPORT VENTILATION:* TRACHEOTOMY, PROLONGED CONTROLLED VENTILATION, GASTRIC TUBE AS NECESSARY

SUPPORT CIRCULATION
CONTROL CONVULSIONS
MONITOR

Figure 1. The A, B, C of emergency resuscitation. These instructions have been arranged for the front and back of a billfold card or for a poster which may be obtained from the Pennsylvania Heart Association or the Pennsylvania Department of Health, Harrisburg.

Gauge (to determine salvability), Hypothermia, and Intensive Care. The latter includes prolonged artificial ventilation, tracheotomy, continuous monitoring, control of convulsions, fluid therapy, etc.

AIRWAY

Hypopharyngeal obstruction by the base of the tongue in the unconscious patient whose neck is flexed is a well-known entity.[11] Maximal backward tilting of the head is the first and most important step. Should this not lead to air movement through mouth and nose, positive-pressure inflation attempts by mouth-to-mouth, mouth-to-nose or bag-mask should be added. If these are also unsuccessful, attempts at clearing the pharynx should be made. Should obstruction persist in spite of the above measures, the mandible should be displaced forward and/or an oropharyngeal tube inserted.

Tracheotomy is not an emergency re-oxygenation procedure, since it may become a prolonged operation even in the hands of experienced surgeons. Tracheotomy should be performed whenever possible in the well-oxygenated patient whose ventilation is supported by bag-mask or via tracheal tube. Orotracheal intubation should become part of every physician's training. In contrast to tracheotomy, which is performed at the level of the second to fourth tracheal rings, incision of the cricothyroid membrane may be considered an emergency procedure. Cricothyrotomy may be considered by the physician who is not trained in tracheal intubation or does not have intubation equipment immediately available, and when other measures of opening the air passage have failed. In the apneic patient, cricothyrotomy may offer difficulties because of lack of tubing and connections to ventilation equipment.

BREATHING (VENTILATION)

The most recommended methods are intermittent positive-pressure inflation technics. One may use exhaled air (mouth-to-mouth, mouth-to-nose, mouth-to-adjunct), air (bag-mask, bellows-mask), or oxygen (bag-mask, resuscitators).

One simple way of performing mouth-to-mouth ventilation is to maintain backward tilt of the head with one hand at the patient's forehead and the other under his neck (Figure 1). Usually, the patient's mouth opens automatically. The operator seals his mouth around the patient's mouth with a wide open circle, and blows. He uses his cheek to prevent air leakage through the patient's nose. In the case of trimus, mouth-to-nose ventilation is recommended. In this case, expiratory obstruction is common, and the mouth may have to be opened for exhalation.

Next to the exhaled-air methods, bag-mask ventilation, with the self-inflating bag designed by Ruben which does not depend upon a supply of oxygen, is probably the simplest and most effective approach (Figure 2). It is easier to learn than the use of the anesthetist's oxygen-bag-mask to-and-fro unit. The self-inflating bag uses a non-rebreathing system. Oxygen may be added to the bag inlet.

Mechanical resuscitators are not recommended for emergency re-oxygenation, since they are usually pressure-set respirators and thus do not adapt to the ever-changing resistances of lungs and thorax and to the changing leakage in the non-intubated patient. Only hand-operated or lung-operated technics can adapt inflation pressures, volumes, rates, flows and rhythm according to the changing conditions in an emergency situation. Mechanical respirators should be reserved for patients with tracheal or tracheotomy tubes already in place. Most resuscitators are not suitable for ventilation during external cardiac compression.

CIRCULATION

One of several useful sequences for use by a single operator is as follows (Figure 1): When confronted with an unconscious, apneic person, quickly inflate his lungs three to five times. Feel for the carotid pulse. If the pulse is present continue ventilation. If the pulse is absent, start external cardiac compression at the rate of one per second or faster. The lower half of the sternum should be pressed against the vertebral column for one to two inches in the adult. Alternate 15 sternal compressions with two quick lung inflations. Check for return of a spontaneous pulse after every one to two minutes.



Figure 2. Bag-mask ventilation with self-inflating unit.

If there are two operators who know how to work together, one operator may press the sternum without interruption, and the ventilating operator can interpose one quick lung inflation after every fifth sternal compression. External compression without positive-pressure ventilation cannot be relied upon to ventilate the lungs.[14]

During sternal compression, an artificial pulse should be felt. Even if this is the case, blood flow cannot be expected to be greater than 10 to 30 per cent of normal cardiac output. This has been shown both in animals and man with cardiac arrest.[15, 16] Therefore, spontaneous circulation should be restarted as rapidly as possible.

External cardiac compression has replaced internal cardiac compression almost entirely. At present there seem to be three indications for opening the chest: (1) when one suspects intrathoracic pathology such as pneumothorax or hemothorax; (2) when one cannot produce a palpable femoral or carotid pulse with external cardiac compression, as occasionally is the case in patients with very rigid chests; and (3) when external defibrillation attempts have repeatedly failed. Thoracotomy should certainly be done only by physicians and only in hospitals.

DRUGS

As soon as possible after the initiation of cardiac compression, epinephrine 0.5 mg. should be injected. We prefer to use the venous route first, for we have seen pneumothorax and injury to the coronary arteries from attempted intracardiac injections. One should give epinephrine without waiting for an electrocardiogram. In asystole, epinephrine may restart the heart, and in ventricular fibrillation it facilitates defibrillation and resumption of adequate spontaneous circulation after countershock. This recommendation is made in spite of the fact that occasionally an asystolic heart may be thrown into ventricular fibrillation by the injection of epinephrine. In prolonged resuscitations, when the myocardium is acidotic, larger doses of epinephrine (1-2 mg.) may be required to produce an effect.

It is of interest that vasopressors with purely peripheral action are as effective as epinephrine, and are more effective than isopropylarterenol which has a direct effect on the myocardium.[17] For the restarting of spontaneous cardiac action, promotion of coronary circulation by peripheral vasoconstriction seems to be more important than the inotropic effect of the drug on the heart.

After several minutes of artificial circulation without restoration of spontaneous circulation, sodium bicarbonate should be given. More research is required to delineate the exact place of alkalinizing agents in cardiac resuscitation. The recommended dose of sodium bicarbonate, 50 m.Eq., is based on neutralization of titrable acid derived from 5 min. of estimated CO_2 production in cardiac arrest.[6] Nahas feels that sodium lactate is not an effective buffering agent and that THAM may be superior to bicarbonate.[6]

FIBRILLATION TREATMENT

As soon as possible after the start of external cardiac compression, electrocardiography should be performed to determine whether there is ventricular fibrillation. The alleged advantages of DC defibrillation over AC defibrillation may have been exaggerated.[6] DC countershock seemed more effective in very large and diseased hearts and in hypothermia. The claim that heat damage to the myocardium is less with DC countershock seems of little practical importance for the external technic. Although the myocardium can be burned with direct (internal) application of electrodes, both with AC and DC shock, there is no evidence that external application of even the highest possible energy will damage the heart so as to impair its resumption of spontaneous contractions.

The recommended energy for external countershock is 100-150 watt-seconds in adults and 50-100 watt-seconds in children. Often higher energy levels are required, particularly in diseased hearts. Therefore, we have been using 300-400 watt-seconds for adults and 200 watt-seconds for children for the first shock, to avoid delay in restarting spontaneous circulation.

There are some who feel that in the absence of electrocardiographic proof of ventricular fibrillation, an empirical countershock should be used, if a spontaneous pulse does not return after a few minutes of external compression and injection of epinephrine. This seems justifiable in the hands of physicians, but not in the hands of laymen. Randomized external shocking of normal dogs with DC defibrillators caused ventricular fibrillation following about 1 per cent of the shocks, and with AC defibrillators following about 5 per cent. The likelihood, in man, of producing fibrillation in a beating heart with various types of shocks is unknown. Also, application of electrodes with poor contact may send lower currents through the heart which may produce ventricular fibrillation. Therefore, with our present lack of knowledge, it seems unwise to allow paramedical personnel to apply empirical external countershock.

PROLONGED ARTIFICIAL VENTILATION

The superiority of intermittent positive-pressure ventilation or postive-negative pressure ventilation by mechanical respirators via tracheal tubes or tracheotomy tubes over the use of the iron lung has been clearly demonstrated.[18-20] The choice of a particular respirator is less important than the general care the patient receives during prolonged artificial ventilation. A satisfactory respirator should provide adequate ventilation even with greatly increased lung-thorax resistance; it should produce an airway pressure curve which permits

an expiratory pause at atmospheric pressure at least as long as the inspiratory phase; it should be simple and reliable in operation; it should not depend upon a supply of oxygen; and it should deliver gas with the highest possible humidity and at body temperature.[20, 21]

In most cases following resuscitation, early tracheotomy is not necessary since the orotracheal tube may be left in place for several days. Hyperventilation, narcotics, and/or relaxants are used if the patient "reacts" on tube or respirator. The cuffed tracheal tube or tracheotomy tube has proved essential in adults for satisfactory respirator care. Over-inflation of the cuff must be avoided. Tracheotomy routine should include asepsis, optimal humidification, and avoidance of trauma. The general care of respirator patients should include periodic deep inflations of the lungs; frequent change of position to counteract hypostatic atelectasis; monitoring of ventilation and circulation; and keeping a person at the bedside at all times, since "plumbing" may fail unexpectedly.[21]

HYPOTHERMIA

Experiments have shown that the reaction of the brain to injury is reduced by hypothermia, even when hypothermia is started following injury.[22] Although hypothermia following cardiac arrest has led to disillusioning results, it probably is indicated in patients who do not show recovery of reflexes within the first 30 minutes following restoration of circulation. We then prefer to cool the patient to 30°C. and maintain him cooled until signs of consciousness return. Hypothermia is induced by external cooling in the curarized state, and during artificial ventilation. Immediately following cardiac arrest, relaxants are preferred over depressant drugs to permit periodic neurologic evaluation, which is easily accomplished by simply discontinuing curarization temporarily.[21] Prolonged hypothermia is maintained when possible by weaning the patient to spontaneous breathing, with control of shivering by intermittent intravenous administration of a mixture of depressant drugs (e.g. phenobarbital/meperidine/phenergan). Chlorpromazine is avoided because of its hypotensive effect.

DROWNING

A discussion of resuscitation from drowning is beyond the scope of this presentation. I want to point out merely that resuscitation of the semi-drowned person calls for more than pulmonary ventilation.[23] If there is evidence of sea-water inhalation, pulmonary edema must be treated with prolonged positive-pressure ventilation with pure oxygen, and the ensuing oligemia and hemoconcentration must be treated with an infusion of plasma or plasma expanders. If there is evidence of fresh-water inhalation, there may also be pulmonary edema requiring prolonged positive-pressure ventilation with oxygen. In addition, there may be hemolysis, hypervolemia, and hemodilution. If this is the case and there is difficulty in establishing effective circulation, a rapid exchange transfusion may be considered.

The swallowing of water during near-drowning and subsequent positive-pressure ventilation attempts, may lead to gastric distension, regurgitation and inhalation of gastric contents. This situation calls for prompt, intensive therapy consisting of tracheobronchial suctioning and lavage, intermittent positive-pressure breathing with bronchodilators, mist and oxygen, steroids, and antibiotics.

EQUIPMENT

For the *physician's car and office,* a self-inflating bag-mask unit (Figure 2) plus regular oropharyngeal airways (infant, child, and adult sizes) or an exhaled-air adjunct (e.g. S-tube, mask plus tube) are recommended. If the physician is skilled in tracheal intubation, he should also carry along a laryngoscope and a set of tracheal tubes. The coramine ampule of the past has been replaced by epinephrine, bicarbonate and a vasopressor. For oxygen inhalation in the patient who does not require resuscitation, a small portable oxygen cylinder with a transparent bag-mask unit is also desirable.

For resuscitation attempts *in hospitals* but outside the operating rooms, a resuscitation cart is required for Phase II of resuscitation. This cart should be maintained in optimal condition by reliable personnel, and all physicians and nurses should know its location and equipment. One such cart is pictured in Figure 3.

Ambulance equipment is in need of modernization, and in redesigning the apparatus we must consider cardiopulmonary resuscitation and effective airway care and oxygen therapy enroute.[24]

WHEN TO START AND WHEN TO STOP

Modern resuscitation has changed the definition of death. Death can no more be defined as "cessation of respiration and heart beat." A more factual definition would be "evidence of irreversible cerebral damage, with unconsciousness."

In acute respiratory and circulatory distress, re-oxygenation must be started immediately. Therefore, there is no time for contemplation and consultation. Should a patient be in the terminal stages of an incurable disease, resuscitation should not be attempted. This should be understood by physicians and nurses alike, prior to death.

After re-oxygenation of the lungs and restoration of effective spontaneous circulation, the situation should be assessed. If the underlying disorder appears incompatible with survival or if there is no doubt that the hypoxic episode has produced irreversible cerebral damage, an unnecessary prolongation of the ordeal should be avoided. In this case, an ethical and humane solution of the problem must be looked for.

Judging the salvability of the nervous system is not easy. Rapid recovery of eye and upper-airway reflexes are good prognostic signs, whereas, progressive deterioration of reflexes, continuing unconsciousness and non-reaction of dilated pupils are poor prognostic signs. In children resuscitative efforts should be continued longer than in adults since complete neurologic and psychologic recovery has occurred in children after long periods of coma.

If restoration of spontaneous circulation during cardiac compressions seems impossible, efforts are best discontinued when dilated, non-reactive pupils, disappearing breathing movements, and areflexia indicate cerebral death.

When in doubt, one should start emergency resuscitation promptly. If after restoration of spontaneous circulation the patient has not regained consciousness, and irreversible cerebral destruction is obvious, the physician should not hesitate to discontinue long-term resuscitation, since survival of a patient with severe brain damage may create an unbearable financial and emotional burden on the family. Obviously, no rules can be established, and professional judgment, religion and finances all play a role here. The physician's choice between prolonged resuscitative efforts and a dignified, peaceful death in patients with incurable disease is part of the art of resuscitation.

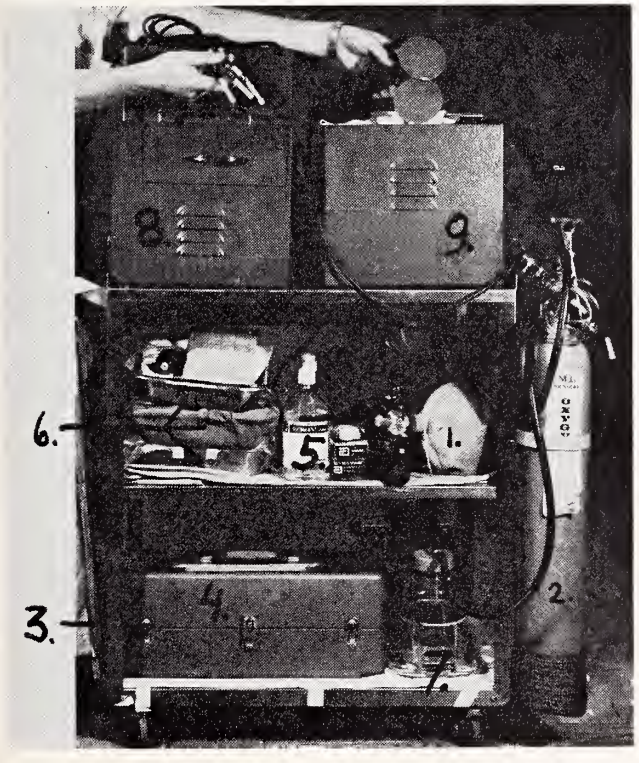


Figure 3. Resuscitation cart used at Presbyterian-University Hospital, Pittsburgh[1]: (1) Ruben bag-mask unit; O_2 to-fro unit behind; (2) Oxygen cylinder; (3) Board to be placed under patient for external cardiac compression; (4) Resuscitation kit with pharyngeal tubes, endotracheal equipment, gastric tube, suction tubes, cuffed tracheotomy tubes, adaptors, syringes, needles, and drugs (epinephrine, nor-epinephrine and sodium bicarbonate, drawn up in syringes ready for use; succinylcholine; pentobarbital; bronchodilators; hydrocortisone; and others); (5) Intravenous fluids (dexrane, dextrose in saline), tubings and stopcocks; (6) Venous cut-down tray; tracheotomy tray; thoracotomy tray; (7) Suction machine with pharyngeal suction tip; (8) E.C.G. Monitor-Scope with needle electrodes ready for use; (9) External-internal defibrillator with external electrodes ready for use; (10) Wright ventilation meter; (11) Blood pressure cuff and stethoscope.

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The Diagnosis and Treatment of Bacterial Endocarditis

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THE TREATMENT of bacterial endocarditis is one of the exciting chapters in medicine. When I was a freshman medical student, in 1939, my classmates and I were presented, at our clinical club, with a 17-year-old boy with a retinal-artery embolus. He was blind, and we were told that he would certainly die. He did die, and bacterial endocarditis was practically a 100 per cent fatal disease at that time. Nowadays, it is curable—at least initially and bacteriologically. Somewhere in the neighborhood of 85 or 90 per cent of patients are initially cured. Yet this is not one of the "knife" diseases; rather, it is one of the nostrum diseases, and the nostrums, unfortunately, are quite expensive. The minimum charge for the treatment of bacterial endocarditis is $2,500.

There seems to have been an increase in the frequency of infectious diseases. In Table 1 are figures from the National Office of Vital Statistics on septicemia reported as the primary cause of death in the United States for some recent years. It is obvious that a constant rise has occurred in the incidence, and I don't think it reflects merely a change in the diagnostic ability of physicians. Rather, the increase has been real. The alarming thing about these figures is that the larger percentage of these cases are not diagnosed etiologically.

We became interested in this problem at University Hospitals, Iowa City, and Dr. Max Jones did a very interesting analysis of the autopsies.[15] His study involved examining the autopsy records for the presence of visible sepsis. *Visible sepsis* is self-explanatory, except for the fact that we added the cases of pyelonephritis, cases of pneumonia, and patients who had had a premortem diagnosis of septicemia. One can see that the percentage fell steadily up to 1953, and that it has risen steadily since then. *Pure-culture sepsis* refers to those patients who had two or more cultures showing growth of an identical organism. If the organism differed, the cases were rejected. So here we have an increase in sepsis (Figure 1).

Dr. Jones made another interesting observation. In the last year of the analysis, the types of organisms isolated at autopsy were different from the types previously isolated. The most frequent organism, of course, was the Staphylococcus aureus. The next most common organism, however, was Pseudomonas aeruginosa, and the third was Escherichia coli. In other words, the gram-negative rods had become more and more important, and I think that the next development in bacterial endocarditis will be one that has not as yet manifested itself—a change to gram-negative rod flora. We haven't seen it yet, but I predict it will happen within the next five years.

From 1929 to 1933, 2.7 per cent of all autopsies showed bacterial endocarditis. Then the figure fell to 0.3 per cent, but then it rose until, in 1954 to 1958, bacterial endocarditis was revealed in 1.3 per cent of all autopsies.[16] Since septicemias have traced the same pattern, I think we can say that these figures are probably legitimate.

In a 1,000-bed hospital such as University Hospitals, Iowa City, we see about one case per month of bacterial endocarditis, and though I don't have the figures to prove it, I have the impression that probably the number is increasing.

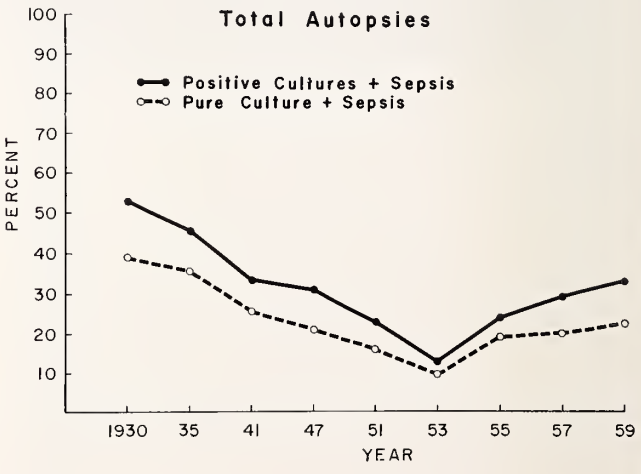


Figure 1. Incidence of sepsis at autopsy, from an unpublished study by Max Jones and I. M. Smith.

Dr. Smith, an associate professor of internal medicine at the S.U.I. College of Medicine, presented this paper on December 6, 1963, at the Cardiac and Respiratory Diseases Conference in Iowa City. The research on which the paper was based was generously supported by grants from Eli Lilly & Co., Indianapolis, and Bristol Laboratories, Syracuse.

TABLE 1

DEATHS FROM SEPTICEMIA AND PYEMIA IN PERSONS ONE MONTH OF AGE AND OVER
UNITED STATES*

	Total	Staphylococcal	Streptococcal	Pneumococcal	Other Specified	Unspecified
1949	587	54	92	16	27	968
1950	616	62	76	20	29	817
1951	677	64	71	18	24	695
1952	726	79	72	24	31	663
1953	783	94	68	29	38	554
1954	897	109	62	19	44	520
1955	938	111	67	22	43	500
1956	1,118	160	64	23	54	429
1957	1,351	217	67	23	76	398
1958	1,663	353	94		90	1,126
1959	1,760	348	94		96	1,222
1960	1,920	329	90		137	1,366
1961	1,886	299	91		141	1,355

* From PUBLIC HEALTH REPORTS, 76:159, 1961, and personal communication from Dr. C. C. Dauer.

DEFINITIONS

Now, a few definitions. These are somewhat idiosyncratic, but I find them useful. To me, bacteremia is the temporary appearance of bacteria in the blood stream, without any permanent disease in the patient. Septicemia, I believe to be the same as bacteremia, plus signs and symptoms which persist in the patient. Bacterial endocarditis, however, is the occurrence of positive blood cultures in patients who usually have petechiae, usually have signs of emboli, and almost always have signs of heart disease. Other interesting data on blood cultures are contained in references 7 and 22.

In Table 2, we have a note on transient bacteremia. One does a procedure on a person, he takes blood cultures almost immediately thereafter, and he finds that bacteria are present in the blood stream. These are the percentages in Table 2. The bacteria are usually present until not more than one hour later. I want to emphasize this point, for it will influence the frequency with which the physician takes blood cultures in trying to diagnose a permanent disease, namely septicemia or bacterial endocarditis. It is obvious that abscess incision and the like are not without hazard in someone who has preexistent heart disease.

What is this preexisting heart disease? Approximately half the patients have rheumatic heart disease. Approximately a quarter have congenital heart disease, and approximately another quarter —and these are very rough approximations—have no previously-detectable heart disease. This last is a bit of a surprise, I think, but apparently bacterial endocarditis can occur in people who previously have had normal hearts.[5, 19, 26]

DIAGNOSIS

How is one to approach the diagnosis of such a patient? How is one to reach the definitive-diagnosis stage by taking blood cultures? Any febrile patient arriving at the doctor's office should be subjected to a careful history-taking. This is true of any medical patient, of course, but I want to emphasize it. In 75 per cent of patients, one will get the correct diagnosis from the history. Most infections occur in the throat, the ears, the chest and the urine. Therefore, careful examinations of the throat, ears, chest and urine should be the next steps. In them, one may well find the cause of the patient's fever. The next step, of course, is the white-cell count, and if it is over 15,000/cu. mm., one is in the bacterial business. If it is normal—and normal is less than 12,000/cu. mm.—one probably is *not* in the bacterial business, but of course the fairly chronic infections are exceptions, and bacterial endocarditis is one of these.

TABLE 2

TRANSIENT BACTEREMIA*

Following	Per Cent Positive Cultures
Tonsillectomy	15-35
Dental extraction	15-38
Abscess incision Staphylococcal	50
Streptococcal	33
E. coli	25
Transurethral operation	53

* From Butler: BLOOD CULTURES, Churchill, 1939.

What else can help us make the diagnosis of bacterial endocarditis? The main thing is that one has to *think* of the disease, as is true of many such conditions. When one is thinking of the disease, it should occur to him that for any patient with a heart murmur who has had otherwise-unexplained fever for two weeks or longer, bacterial endocarditis must be included in the differential diagnosis. If one reaches this stage, he takes blood cultures, and if they are positive and if there is no heart murmur, the patient probably has septicemia. If, in addition, there is a heart murmur and evidence of emboli, he probably has endocarditis, but of course there are exceptions.

Another thing that might make one think of taking blood cultures is the presence of shaking chills. Rigors or shaking chills are important in the differential diagnosis of febrile patients. In the initiation of certain diseases, a single shaking chill is quite common. These include lobar pneumonia, influenza and erysipelas. Of course acute non-infectious hemolysis can cause it, but the two real problem diseases we are dealing with are pyelonephritis and septicemia. A patient with pyelonephritis usually gives the physician a very adequate story of polyuria, for it is a tubular disease and a majority of such people get up at night three times or more to pass urine. This "historical" point will not be recited by the others, but you can see in Table 3 how common shaking chills are in cases of septicemia, and therefore how important it is to ask the patient *not* whether he has had chills, but whether he has had uncontrollable chills—whether he shook the bed when he had them.

Another point of some interest is the presence of anemia. By the time these patients reach a doctor, approximately two-thirds of them have anemias of 12 Gm. or less. If they have anemias of 10 Gm. or less, something else comes up. A large number of these patients have staphylococcal infections, rather than ones caused by Streptococcus viridans. We shall come back to that a little later.

Petechiae are important, and they occur in other diseases, particularly in meningococcal septicemia and meningitis. They do occur in septicemias, but they are not so common. They certainly are an important finding in patients who might have bacterial endocarditis. Looking for them, I think, becomes a habit, and basically one is going to find them above the clavicles, in the hands or in the feet. These are the commonest places. Petechiae, of course, are non-blanching, and can be diagnosed on that basis. In Figure 2 are pictures of a girl of 19 who has bacterial endocarditis. She has well-marked petechiae in the lower conjunctivae, bilaterally. Also, one should look on the insides of the lips, in the general area of the face, on the hands and feet, and especially near the fingernails and the toenails.

Figure 3 shows a patient with an Osler's node, which is a swollen and tender area at the tip of a finger, and probably Janeway lesions, which are

TABLE 3

INCIDENCE OF SHAKING CHILLS IN SEPTICEMIAS

	Per Cent
Streptococcus viridans	78
Staphylococcus aureus	42
Staphylococcus epidermidis	64
Escherichia coli	75
Klebsiella-Aerobachter group	72
Proteus group	79
Pseudomonas aeruginosa	66

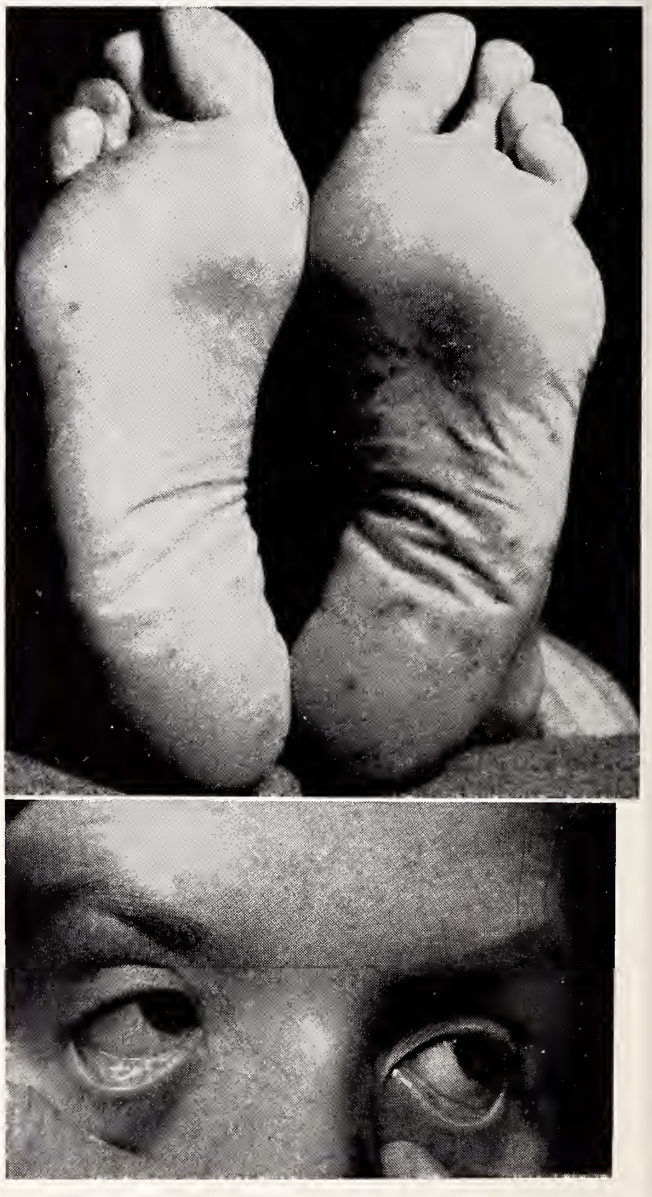


Figure 2. Petechiae of the conjunctivae and feet in cases of bacterial endocarditis.

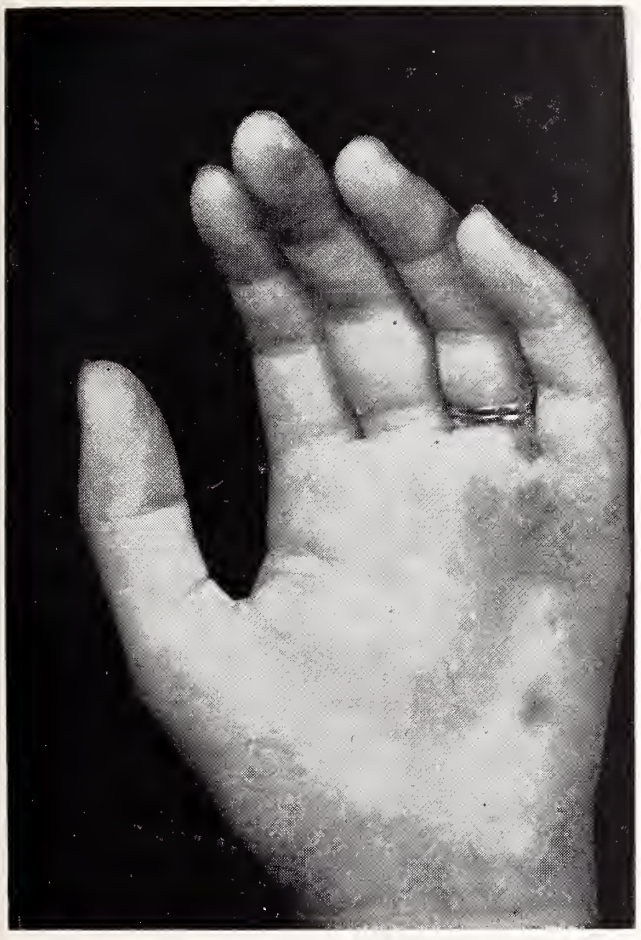


Figure 3. Osler's node (left second finger) and Janeway lesions in patient with bacterial endocarditis.

non-raised areas of redness on the hypothenar and sometimes on the thenar eminences. These are interesting phenomena, but not common enough to be very helpful in diagnosis.

Now as I mentioned previously, the real differential point between septicemia and bacterial endocarditis is the presence of emboli. In Figure 4 we have a kidney from a patient who died of endocarditis. It is the "flea-bitten kidney"—multiple, focal, embolic nephritis. And this embolic nephritis is associated with hemorrhage, usually microscopic rather than gross. In various series, one finds that the incidence of microscopic hematuria varies considerably, from about 30 up to about 75 per cent. My own feeling is that one can find that hematuria if he looks for it frequently enough, and I think it is very important to examine the urine for microscopic hematuria.[5, 11-14, 19]

Of course all these findings go together to form a rather vague picture of a patient with chronic infection, shaking chills, petechiae, etc., and some anemia. Now we get down to the real business of making the diagnosis. It depends upon blood cultures. These can be taken by different methods.[7] In general, the first thing to do is to dilute out the bactericidal components of the normal serum enough so that the bacteria can grow. In other words, it is *not* good practice to take 25 cc. of blood and put it into the normal blood-culture bottle.

In Figure 5 are the kinds of blood-culture bottles we use at our hospital. They have a rubber diaphragm which is cleaned with either iodine and alcohol or just alcohol, and likewise the skin of the patient from whom a sample is to be taken is cleaned with the same materials. If one puts too much blood in the bottle, the normal bactericidal components of the serum will win out, and the culture will be negative. There must be a ratio between 1:10 and 1:20 between the volume of blood and the volume of the broth it is put into. In the ones pictured here, a vacuum was made above by autoclaving, and then the vacuum was filled with 5 per cent CO_2. By this means, one makes a very adequate blood culture, with a normal meat-infusion broth below. Now this will *not* produce an anerobic culture, and if one needs anerobic cultures he must produce them separately by adding blood to tubes of thioglycollate broth.



Figure 4. "Flea-bitten kidney," the result of bacterial endocarditis.

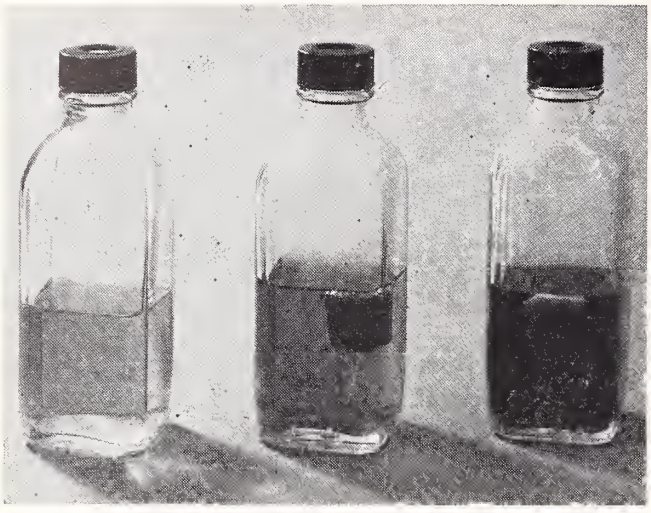


Figure 5. Blood cultures: left, unused; middle, negative; and right, positive.

Various ways of inhibiting antibiotics are available (Table 4).

Now with regard to transient bacteremia. If one takes several blood cultures within an hour, he will get some false-positive cultures. In other words, one may think he has two positive cultures when really he has only one. So I usually take mine approximately two hours apart. In bacterial endocarditis there is a constant discharge of bacteria into the blood, and in addition there are occasional showers. The showers usually precede shaking chills, and if there are shaking chills, the times of their occurrence are more or less predictable. One usually can say that the patient is going to have a shaking chill at 4 o'clock, and if a culture is taken one to two hours before that time, the chances of a positive culture are increased. But it is about a 20-fold ratio, and there are so many bacteria around anyway that the timing is probably inconsequential.

When I am in a hurry, I take five blood cultures one hour apart, or if I am in a big hurry and the patient is in shock, I take three blood cultures one hour apart. Approximately 83 per cent of the first blood cultures will be positive,[2, 5, 17] so once one gets to the stage of taking blood cultures, he is not in too much trouble. Now, as regards taking them from other areas—aortic, arterial or bone-marrow blood. Bone-marrow blood cultures will help sometimes in getting rid of the antibiotic which may be present, but the difficulty of other culture methods out-weighs their advantages.

In Table 5 are my comments on the etiology of bacterial endocarditis. Basically, the flora of bacterial endocarditis is changing. There are several reasons for the change, and the main one is the teeth. In the past, dental hygiene has not been very good, and by special technics it can be shown that the Streptococcus viridans that one picks up in the blood of a bacterial endocarditis patient is serologically identical with the Streptococcus viridans that occurs in the mouth. How it gets into the blood stream is immaterial. It often gets there during a dental extraction, but one can get it into the blood stream by shaking bad teeth.

Because of the change that has taken place in the hygiene of dental care, and also perhaps because of the random use of antibiotics, the presence of large numbers of Streptococcus viridans in a position to get into the blood stream is much less common than it used to be. And as we know from other findings in hospitals, the numbers of staphylococci around, at least until recently, were enormous. Therefore staphylococci are much more prevalent than they once were. The flora for 1960-1963 are radically different from the flora of previous years, which were 80 per cent Streptococcus viridans. Today, the Staphylococcus aureus and the Staphylococcus epidermidis (its old name was albus) together make up almost as many as the Streptococcus viridans.

Now let me mention again that with a white blood cell count of over 15,000 one probably is in the staphylococcal business, either epidermidis or aureus, and probably *not* in the viridans business, which is usually accompanied by counts of 13,000 or lower (i.e., a slightly abnormal or a normal white-cell count).

TABLE 4

INHIBITING ANTIBIOTICS

1. P.A.B.A. for sulfonamide 0.1 per cent of saturated solution in broth
2. Penicillinase for penicillin about 1 ml. staph. filtrate
3. Metal or cysteine for tetracyclines
4. Clot culture
5. Millipore filter[25]
6. Bone-marrow culture

How many patients do not grow a bacterium? Nineteen per cent. Well, what can one do in such a case? Most of these patients have genuine bacterial endocarditis, and there isn't the slightest reason why one can't grow the organism from their blood, but one does have to guard against missing the anerobic organisms. Thus, if the blood cultures are negative, I think one should take some anerobic ones.

The other thing that one must watch out for nowadays is fungal endocarditis. The differentiation between a fungal septicemia and a fungal endocarditis is very difficult.

Streptococcus faecalis is important, as we shall note in a moment, because of the use of chemotherapy of different types.

PROPHYLAXIS

What about prophylaxis? First of all, prophylaxis against the recurrence of rheumatic fever.

My own view is that the original American Heart Association recommendations were better than the present ones. The previous advice called for five years of prophylaxis after an attack of rheumatic fever, or until the patient reached age 21, whichever period was longer. The present recommendations call for prophylaxis against streptococcal infection for life. I think that perhaps lifetime protection is indicated in certain situations. I have seen some physicians who, despite having had rheumatic fever, decided to go into otolaryngology, where one is regularly subject to streptococcal infections. For such people, I suppose lifetime prophylaxis is justified.

What about prophylaxis against bacterial endocarditis in a patient who has a damaged heart?[6] I think it must depend upon the physician's plans, and in Table 5 I have shown what he should do if he is going to extract teeth, to do a transurethral prostatectomy or to undertake various other procedures. How is one to make sure of not doing damage to the patient—for instance the child who is to have a tonsillectomy for recurrent infections? It will take most of the week to get the bacteria out of those tonsils, and thus a week's treatment should be invested before the operation takes place. I am not talking against tonsillectomy here. Certain children really need it, but I think it should take place only after adequate preparation.

TREATMENT

Now with regard to terminology. Should we continue using the names *subacute bacterial endocarditis* and *acute bacterial endocarditis,* or should we simply call all cases *bacterial endocarditis?* This question has been argued in the literature, and some very competent people believe the two names should be retained, but I find it difficult to make the distinction clinically. In retrospect, perhaps, one can tell whether a case was subacute or acute, but when a patient arrives at the hospital with the manifestations of endocarditis, and if he is febrile, one has no way of telling whether his case is subacute or acute. Thus, I choose to refer to the patient as a case of bacterial endocarditis due to Streptococcus viridans or due to Staphylococcus aureus, since I believe that the best treatment is based on finding the exact etiology—on finding the organism.

What chances does one have of finding the organism? Careful studies show that no matter how many cultures one takes, the benefits fall off sharply after the fifth blood culture.[2] In five blood cultures one can get 95 per cent of the positive cultures that he is going to get. Thus if he has taken six or maybe seven, he has made the right gesture. The patient is sick, and treatment is indicated. The thing that worries the physician, and makes him rush his blood cultures, is the presence of massive petechiae or of an aortic-valve lesion. Even though he rushes, he is sometimes too late. If there is an aortic-valve lesion, it may rupture, and particularly if one has a suspicion that the causative agent is not Streptococcus viridans, it is likely to take a fulminant course, and the patient may get a life-threatening embolus. Thus, the treatment must be started promptly.

Let us take the simplest form of treatment. If the patient has a nice, normal Streptococcus viridans which is very sensitive to antibiotics, the

TABLE 5

PROPHYLAXIS AGAINST BACTERIAL ENDOCARDITIS IN PATIENTS WITH HEART DISEASE

Operation	Duration	Daily Dose	Comment
Dental extraction	Day –2 to Day +2	Penicillin V, 500 mg.	600,000 aqueous, I.M. 600,000 procaine, I.M. Penicillin G, one hour prior to operation
Dental extraction	Day –1 to Day +1	600,000 procaine penicillin G, daily, I.M.	600,000 aqueous I.M. penicillin one hour prior to operation
Dental extraction	Day –1 and Day 0	2 Gm. P.O. tetracycline	Patients allergic to penicillin
Tonsillectomy	Day –7 to Day +1	600,000 procaine penicillin I.M. daily	
Urethral manipulation	Day 0 to Day +2	Gantrisin, 4 Gm/day	
T.U.R., D&C for incomplete abortion, etc.	Day –2 to Day +2	1,200,000 penicillin G plus 1 Gm. streptomycin and 1 Gm. tetracycline	

indicated treatment is 5 to 6 million units of penicillin daily for four weeks. There are some people, and they are good investigators, who have treated patients for just two weeks. They have increased the amount of penicillin to 10 million units a day, and have added 2 Gm./day of streptomycin. They have had success with this regimen in long-term follow-up. Unfortunately, the literature shows that the total number of people treated in this way hasn't exceeded 100, and I don't feel willing at the present moment to recommend this short-term therapy. However, I do recommend four weeks' treatment, rather than six weeks,' when one can show by a test in the laboratory that the organism is sensitive to 0.2 units or less. On such a sensitive organism, one can get away with four weeks of treatment.

How can one judge the adequacy of his treatment? After the patient has been on treatment for two or three days, one can bleed him and get some serum. Then he can take the organism that came out of the patient's blood originally, grow it overnight in broth, and take a 1:10 dilution of the overnight culture. This will yield about 100 to 10,000 organisms. Then he should add these organisms to a 1:4 dilution of serum, and incubate them overnight. If the liquid is not cloudy in the morning, a bacteriostatic level has been reached. If one streaks culture onto a plate and can't grow any organisms, he has a bactericidal level, and this is adequate for the continuation of treatment for a period of between four and six weeks. If one does not get this bactericidal level, many people will accept an inhibitory level—i.e., the first overnight culture in a dilution of 1:32 (Figure 6).

When I use streptomycin, I usually use 2 Gm. of it initially, and then fall back to 1 Gm./day.[27] In 99 per cent of patients, I have no worry about giving a total of 40 Gm. of streptomycin. Toxic signs occur after 40 Gm. has been given, but one can give one gram per day for 40 days if he wishes.

With regard to the rest of chemotherapy, I have indicated what one might do in Table 6. Let me say in passing that if there is a Streptococcus faecalis (also known as an enterococcus) in the blood, one needs to use double chemotherapy. This double chemotherapy consists of pencillin *and* streptomycin, no matter what the *in vitro* tests indicate. *In vitro* tests are generally useful, but this is the exception that proves the rule. Disregard them as regards Streptococcus faecalis.

I should like to comment on two areas of antibiotic use. First of all, in regard to Pseudomonas aeruginosa infections and colistin. Colistin is a chemical relative of polymyxin, but it is better than polymyxin for several reasons. It is less toxic to the kidney, it is less toxic to the nervous system, and it is less painful. Patients on polymyxin used to get very bizarre types of toxic effects. A patient of mine complained that her head was square, and that she didn't know which side of the square to lay on the pillow. These toxic effects are very unusual and very difficult to handle. The great shortcoming of colistin or polymyxin is that it has a great gap in its spectrum, and that is Proteus. But in general it is a reasonable antibiotic for quite a number of organisms in the gram-negative spectrum.

The other problem area is the chemotherapy against staphylococci. In Table 7 we have an indication of what one can use against staphylococci in the seriously ill patient, and it is with him that we are concerned here. If I may interject a comment, this disease is a life-threatening one, and therefore it should be treated in the hospital, as indeed should all endocarditis entities. Toward the end of therapy, if one can show that the patient will absorb oral penicillin, perhaps the individual with S. viridans endocarditis can be sent home, but I prefer to treat him in the hospital for the whole period. Methicillin, oxacillin or nafcillin is the treatment of choice. Each of these is resistant to penicillinase. The drug of choice for the patient who is allergic to penicillin is vancomycin or cephalosporan. Vancomycin is a good drug, but difficult to administer because it has to be given intravenously. Please remember that penicillin G is the drug of choice if the organism is sensitive

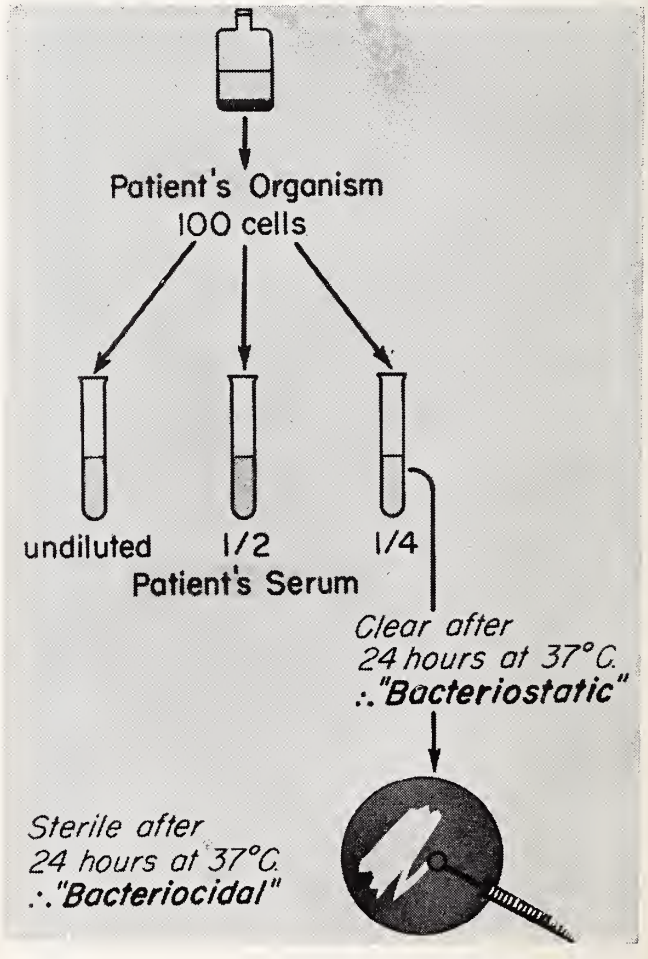


Figure 6. The serum bactericidal test to indicate efficacy of antibiotic regimen in septicemia and bacterial endocarditis.

TABLE 6
SUGGESTED ANTIBIOTIC REGIMENS FOR TREATMENT OF BACTERIAL ENDOCARDITIS

Organism	Sensitivity	Antibiotic	Route	Total Daily Dose	Length of ℞ in Days
S. viridans	0.2 u/cc. or under	Penicillin V or G	P.O.* I.M.	6 million	28
S. viridans	0.2 u/cc. or under	Penicillin V plus streptomycin	P.O.* I.M.	6 million plus 2 Gm.	14[10, 21]
S. viridans	More than 0.2 u/cc.	Penicillin G plus streptomycin	I.M.	10 million penicillin plus 1 Gm. streptomycin	42
Beta hemolytic streptococcus	Sensitive to penicillin G, etc.	Penicillin G	P.O.* I.M.	6 million	28
S. faecalis	Disregard	Penicillin G plus streptomycin	I.M.	6-20 million penicillin 2 Gm. streptomycin	42
No organism		Penicillin G, streptomycin and benemid	I.M. P.O.	20 million penicillin 1 Gm. streptomycin 2 Gm. benemid	42
D. pneumoniae	Sensitive to penicillin, etc.	Penicillin G	P.O.* I.M.	6 million**	28
S. aureus[9, 23] or epidermidis[24]	Resistant to penicillin G	Methicillin, oxacillin or nafcillin	(I.V.) I.M. (P.O.)	8-12 Gm.	42
		Vancomycin† or cephalothin†	I.V. I.M.	1-2 Gm. 6 Gm.	28 42
S. aureus or epidermidis	Sensitive to penicillin G	Penicillin G	I.M. P.O.*	6 million	42
Gram-neg. rod	By test	Kanamycin, streptomycin, colystin, tetracycline, and chloramphenicol	I.M.	2 Gm. (150 mg.)	42
P. mirabilis and some E. coli	By test	Penicillin G	I.M.	20 million	42

* All patients receiving oral penicillin for bacterial endocarditis must have laboratory evidence of absorption. The oral dose should be 3-5 times the intramuscular dose given.
** 24 million if the patient also has meningitis.
† For patients allergic to penicillin.

TABLE 7
ANTIBIOTICS FOR SERIOUS STAPHYLOCOCCAL INFECTION

		Per Cent Sensitive	Routes	Acid Stable	Toxicity Scale 1-4
Methicillin	Staphcillin	100±	I.M., I.V.	+	1
Oxacillin	Prostaphlin	100±	P.O., I.M.	+	1
Nafcillin	Unipen	100±	P.O., I.M., I.V.	+	1
Vancomycin*	Vancocin	100±	I.V.	0	2
Cephalosporan*	Keflin	100±	I.M., I.V.	0	1
Penicillin G	—	30-70**	I.M., I.V.	0	1

* For patients allergic to the penicillins. All except penicillin G are penicillinase-resistant.
** In general practice and in hospital, respectively.

TABLE 8

STEROIDS IN SERIOUS INFECTIONS[28]

	Number of Patients		Fatalities (Per Cent)	
	Over 16	Under 16	Over 16	Under 16
Hydrocortisone	96	74	56	6.8
Placebo	98	61	43	6.6

Patients who survived had pretreatment levels of 24-110 Gm. per cent, and those who died had 18-154 Gm. per cent of serum 17-hydroxycorticoid (normal levels 10-40 Gm. per cent), so no patients were deficient in steroid.

to it. Thus I have presented a run-down on what one might use for staphylococcal endocarditis.[9, 23, 24]

One should always make sure that the patient's teeth have been put into good order. This should be done early in the course of therapy, for the flora of the mouth will change to gram-negative, and one doesn't want that sort of thing complicating the picture.

Next, with regard to steroids. In a recent issue of J.A.M.A., a cooperative group has reported on a study of people with serious infections—a double-blind study where alternate cases received dummy and actual injections of steroids associated with appropriate antibiotics.[28] The code wasn't broken until the study had been finished. Table 8 shows that the steroid patients did a little less well than the patients who didn't get steroids, on the basis of either immediate or eventual fatality rate, but the difference was not statistically significant. Essentially, then, the steroids do no good, and they can do harm. Of course in some patients one must diagnose a present state of adrenal failure. He can do this on the basis of the Fantus test, hypoglycemia and a study of the eosinophils. If adrenal failure is present, one needs steroids; otherwise, one doesn't.*

TABLE 9

ONE WEEK'S ANTIBACTERIAL COST FOR A PATIENT WITH BACTERIAL ENDOCARDITIS

Colistin I.M., 50 mg. QID	$115.00
Vancomycin, 0.5 Gm. BID	90.00
Methicillin, 1.0 Gm. q4hrs.	168.00
Procaine penicillin, 600,000 U., I.M., BID	50.00*
Streptomycin I.M., 0.5 Gm. BID	35.00*
Oxacillin, P.O., 1 Gm., QID	45.00
Chloramphenicol, P.O., 0.5 Gm., QID	30.00
Erythromycin, P.O., 0.25 Gm., QID	10.00
Novobiocin, P.O., 0.25 Gm., QID	15.00
Furadantin, P.O., 50 mg., QID	7.00
Sulfa (Gantrisin), P.O., 1 Gm., q4hrs.	5.00
Mandelamine, P.O., 12 Gm./day	10.00
Tetracycline, P.O., 0.25 Gm., QID	10.00
Ampicillin, P.O., 0.5 Gm., QID	10.50
Isoniazid, P.O., 100 mg., TID	1.00
Nafcillin, P.O., 0.5 Gm., QID	15.00

* Includes cost of administration and syringe replacements.

GAUGING THE PATIENT'S PROGRESS

When one has engaged in this expensive program of treatment (Table 9), how is he to know that he has cured or not cured his patient? I know of only one method of doing it. If one takes blood cultures and in the middle of a course of therapy gets a positive blood culture but finds that the organism is still sensitive to the antibiotics that he is using, he should disregard it. Taking blood cultures afterward, I don't think helps at all, and I rely on taking a daily temperature at around four to six o'clock every afternoon, when the temperature would be expected to rise in any febrile patient. If the patient has an oral temperature of 100°F. or higher, he is brought back for blood cultures, and is retreated if necessary. I know of no other way to do. Sedimentation rates, C-reactive proteins and all the rest, I don't think are of any help.

Certain unusual aspects of bacterial endocarditis are too specific to present in a general introduction such as this. However, references to them are included in the bibliography.[1, 8, 15, 18] Seriously ill patients may need intravenous antibiotics, and a guide to mixing them is presented in Table 10.

There is an excellent book by Andrew Kerr, Jr., entitled SUBACUTE BACTERIAL ENDOCARDITIS.[17] Unfortunately, since it was published in 1955, it is now out of date, but I can recommend it as an

* Since this was written, a suggestive study has appeared in the literature stating that more than 300 mg/day may be helpful in patients in septic shock. Smaller doses were without benefit.[29]

TABLE 10

ANTIBIOTICS THAT CAN OR CAN'T BE MIXED FOR INTRAVENOUS USE

C = Compatible I = Incompatible

	Penicillin	Streptomycin	Erythromycin	Novobiocin	Chloramphenicol	Tetracycline	Vancomycin	Ristocetin	Bacitracin	Sodium Sulfadiazine
Penicillin	—	C	C	C	C	I	I	C	C	C
Streptomycin	C	—	C	I	C	C	C	C	C	—
Erythromycin	C	C	—	I	C	C	C	C	C	C
Novobiocin	C	I	I	—	I	I	I	I	I	C
Chloramphenicol	C	C	C	I	—	C	C	C	C	C
Tetracycline	I	C	C	I	C	—	C	C	C	C
Vancomycin	I	C	C	I	C	C	—	C	I	I
Ristocetin	C	C	C	I	C	C	C	—	I	C
Bacitracin	C	C	C	I	C	C	C	I	—	C
Sodium Sulfadiazine	C	C	C	C	C	C	I	C	C	—

authoritative account of the disease up until that date. Another interesting section of the history of the disease has been written by Dr. Bloomfield.[3]

SUMMARY

In summary, bacterial endocarditis is a disease that is not hard to diagnose if one thinks about it. One must consider it a possibility in the patient who is febrile for a reasonable period of time, such as two weeks, and also has a heart murmur, or nowadays in a patient who has recently recovered from cardiac surgery and remains febrile. If one does think of this possibility, he can diagnose the majority of cases by taking five blood cultures. When he has the blood cultures and has found the organism and the sensitivities, he is faced with a definite choice of antibiotics. He can use those for the fixed periods of time that I have indicated, and he will get approximately an 85-90 per cent bacteriologic cure rate. Unfortunately, the rate is not so good as this five years later, and ranges all the way from 75 down to 50 per cent, with deaths occurring largely from cardiac failure or from uremia due to damage from embolic nephritis.[20]

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Proposed Restriction on Amphetamines, Etc.

A bill that has been proposed by Senator Thomas J. Dodd, of Connecticut, would provide an effective legal weapon against the illegal traffic in amphetamines, barbiturates and other abused drugs, Mr. Donald K. Fletcher, head of law-enforcement liaison unit of Smith, Kline & French Laboratories, told an American Legion group in Dallas, recently. But he warned that Congress has failed to pass similar measures because of public apathy toward them.

The measure, which has been approved by the Senate and is now before a House committee, would require manufacturers of certain prescription drugs to register with the federal government and make their inventory and sales records available to FDA inspectors. The proposal would also make it illegal for unauthorized persons to possess the drugs, and especially severe penalties would be established for persons convicted of selling them to youngsters.

"We can control drug abuse only by controlling the source of the abuse, and the source is illegal interstate traffic in the drugs," Mr. Fletcher asserted. "The problem can be solved only by a relentless attack on the small minority of drug manufacturers and distributors who are the major sources of the illegal traffic."

Recent Advances in Cardiac Laboratory Diagnosis

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Catheterization of the heart had its formal beginnings in 1929, when the German urologist Forssmann successfully passed a catheter from his own antecubital vein to his right atrium. This technic gained little attention in the United States until 1941, when Drs. Cournand and Ranges decided to perfect the procedure. This new tool allowed a more precise anatomical and functional diagnosis than had previously been possible, and added greatly to the knowledge of venous blood flow and pulmonary function. Concurrent with this forward step was the development of new surgical procedures for the correction of both congenital and acquired heart disease. In particular, devices to provide safe extracorporeal circulation led to research in cardiac laboratory diagnosis for the welfare of both patient and surgeon. Advances in recent years have resulted in a new understanding of both cardiac anatomy and physiology. In fact, it is doubtful if a proper diagnosis can be made without integrating the findings of both disciplines in the evaluation of a particular laboratory procedure. I shall mention briefly some of the recent advances in this field.

RIGHT-HEART CATHETERIZATION

Catheterization of the venous circulation allows basically only the study of the right side of the heart and the pulmonary circulation. Although chemical blood studies and pressure recordings on the right side of the heart are important, these items alone are not enough to enable us to understand all of the physiologic mechanisms taking place within the heart. In particular, pressure recordings and pressure gradients across valves are subject to strict interpretation, since pressure, resistance and flow are mathematically interrelated. A high gradient in the face of a low flow is much more significant than a flow which is normal or high. Attempts, therefore, to measure cardiac output have proved immensely important in the evaluation of any cardiac lesion.

Most of us are familiar with the Fick determination of cardiac output, in which simultaneous systemic arterial and pulmonary arterial blood are obtained. The arterio-venous oxygen difference and the patient's known oxygen consumption over a specified period of time are used to calculate the flow. This is a cumbersome but accurate technic. A newer method of cardiac-output determination involves the use of dye. A measured quantity of dye is injected into the venous circulation and is sampled from a peripheral artery through a suitable sensing instrument. The time-concentration curve thus recorded is a mathematical representation of cardiac output. Interpretation of the curve requires a series of involved mathematical computations. Recently, the output from the densitometer or sensing instrument that samples the dye concentration has been fed directly to a computer, and the signal has been converted instantly into cardiac output per unit of time. This method has an accuracy which equals that of the Fick procedure, and it is much easier to repeat serially than is the Fick method.

Until approximately a decade ago, blood-oxygen concentration was the only laboratory means of determining whether left-to-right or right-to-left shunts existed between the systemic and pulmonary circulations. Anyone who has worked with the Van Slyke method of determining blood-oxygen content knows that this method requires rigorous controls if laboratory error is to be avoided. Even in the best hands and in the best laboratories, there often are remarkable variations in results from blood sample to blood sample. For this reason, and also because some shunts are so small that the mixing phenomenon obscures any change in oxygen concentration, the chemical determination of blood-oxygen content is not extremely accurate in determining the presence of shunts.

A modification of the dye-dilution cardiac output technic enables investigators to localize both left-to-right and right-to-left shunts with greater precision. A bolus of dye is injected into the circulation upstream from the shunt, and samples are obtained at a downstream site. By checking the appearance time of the dye at the latter location and by checking the shape of the curve so recorded against normal dye curves, one can easily determine the presence of a shunt. It becomes possible to localize the level of a shunt to a patent

Dr. Warkentin, an associate in internal medicine at S.U.I., made this presentation at the conference on cardiac and respiratory diseases held in Iowa City in December, 1963.

ductus arteriosus, a ventricular septal defect, an atrial septal defect, an anomalous pulmonary venous drainage, or perhaps a combination of the above anomalies.

Other technics have been instituted for the simple determination and localization of left-to-right shunts. Two of the most recently developed ones involve an identical principle, i.e., the administration of a gas which diffuses freely from the lungs into the blood. In one instance the patient inhales radioactive Krypton^{85} for approximately 30 seconds. During this inhalation, blood is withdrawn simultaneously from the pulmonary and brachial arteries. When the differential level of radioactivity in these blood samples is measured, the presence of a shunt can be determined from the ratio so derived. This method is far more accurate and can detect smaller shunts than can the blood-oxygen method.

Probably the most accurate technic in use at the present time, however, utilizes the inhalation of a single breath of gaseous hydrogen. The hydrogen diffuses freely from the alveoli of the lungs into the blood as it returns to the left side of the heart. It is known that when elemental hydrogen is placed in contact with metallic platinum, it will yield ionic hydrogen and two electrons for each molecule of hydrogen gas. The emission of these electrons can be detected by suitable amplifiers connected to the platinum band at the tip of a cardiac catheter. If the catheter is placed in the pulmonary artery and a left-to-right shunt is present, a current will appear at the tip of the catheter. Then by placing the tip of the catheter successively in the right ventricle, right atrium and superior vena cava, one can also determine the level of the shunt. Extremely small shunts can be precisely localized by this method. The procedure is simple and safe, although when one is using hydrogen, a pertinent motto to keep in mind is: "Remember the Hindenburg!"

The preoperative evaluation of patients scheduled for pneumonectomy has been largely a subjective one. All sorts of pulmonary-function tests have been devised to assist in this evaluation. These include the known mechanical volumetric tests as well as differential bronchospirometry. In a cardiac laboratory, differential lung function may be studied through the use of a special balloon-tipped catheter. Expansion of this balloon in either the left or the right pulmonary artery occludes the circulation to that lung. Appropriate lung-function studies can then be performed, and the patient's tolerance to pneumonectomy can be more precisely defined.

A by-product of right-heart catheterization which has yielded little in the way of diagnostic benefits has afforded rather significant advances in our knowledge of myocardial metabolism. The coronary sinus, which drains 75 to 80 per cent of the arterial blood going to the heart, drains into the posterior portion of the right atrium. With a little practice, one can catheterize the coronary sinus quite easily. Chemical analysis of blood draining through this structure has yielded much information regarding myocardial metabolism and coronary blood flow. Recently the miniaturization of equipment has resulted in the development of a microphone pickup adaptable to the tip of a cardiac catheter. This has resulted in the recording of intracardiac phonocardiograms. By placing the catheter variously in the great vessels and in chambers of the heart, one is sometimes enabled to make a differential diagnosis of certain valvular lesions by virtue of the presence or absence of a murmur.

LEFT-HEART CATHETERIZATION

The refinements of diagnosis afforded by right-heart catheterization led to efforts at exploring the left or systemic chambers of the heart. Early attempts, notably by Zimmerman, were made to pass catheters retrogradely up peripheral arteries. Suitable data could be obtained, but the aortic valve presented an obstacle to easy entrance into the left ventricle, and virtually precluded entry into the left atrium. Observations that direct needle puncture of the heart in animals usually produced no serious consequences led to various modifications of this technic in man. One of the earliest attempts at the measurement of direct left-atrial pressures utilized the transbronchial approach. A long needle inserted through a bronchoscope punctured the walls of both the left main-stem bronchus and the left atrium. Pressures were recorded by attaching the needle to a suitable recording device. Obviously, the surgeon needed some dexterity and some knowledge of bronchoscopic technics to assure a successful study, and some patients were notably reluctant to undergo such a procedure.

In recent years, both the left atrium and the left ventricle have been entered by the direct percutaneous approach. The atrium can be punctured from either a posterior or a suprasternal approach. A long, thin-walled needle is inserted—somewhat blindly, it must be admitted—toward the region of the left atrium. From the posterior approach, the needle passes through the paravertebral muscles, the pleura, sometimes through lung tissue and esophagus, and into the left atrium. From the suprasternal route, the needle passes through the aorta and the pulmonary artery into the left atrium. When this atrial structure has been entered, pressure recordings can be made directly through the needle or via a small polyethylene tube inserted through the needle into the left atrium. Occasionally the left ventricle and aorta can be entered as well. Recordings of pressure directly from the left ventricle are best made when the needle has entered the apex of the heart from the chest wall in the long axis of the ventricle. In some instances, the heart is transfixed by two of these needles simultaneously.

The end result of all this cardiologic voodoo is that suitable measurements can be obtained from

all chambers of the heart. If one reflects for a moment on the structures being impaled, it is obvious that the foregoing procedure is not innocuous. Occasional hemorrhage and pneumothorax have caused morbidity and occasionally death.

To reduce the frequency of complications, a new method of entering the left atrium has been devised. The right groin of the patient is prepared, and the right saphenous vein is isolated. A soft catheter is then introduced into the saphenous vein, up the inferior vena cava, and into the right atrium. One inserts a long needle with a curved tip through the catheter, and by suitable manipulation under fluoroscopic control, he punctures the interatrial septum. Following the puncture of this structure, he advances the catheter over the needle, into the left atrium, and usually into the left ventricle also. This transseptal approach reduces the danger of hemorrhage into extracardiac structures, allows the recording of pressures from all four chambers of the heart, and also allows the injection of contrast material for angiographic visualization. This method also has its hazards, and instances have been reported wherein the free wall of the heart has been punctured and pericardial tamponade has resulted.

Newer catheter designs and increased experience have increased the physician's ability to pass the catheter retrogradely through the aortic valve. It is not unusual for right-heart and left-heart catheterization to be done simultaneously. With practice, one can enter the orifices of the coronary and the renal arteries consistently. Important angiographic studies of the coronary and renal circulations have resulted. These left-heart procedures have increased our knowledge and understanding of acquired heart disease—particularly rheumatic heart disease with its associated mitral and aortic valvular lesions. Our understanding and recognition of the various types of aortic stenosis have also been advanced considerably by these left-heart procedures.

A most important advance has been in the area of x-ray and cinefluoroscopy. We are now able to inject contrast material into the various chambers of the heart or great vessels selectively, and to observe the progress of the dye by means of rapid film-exposure technics. As many as 60 films can be taken in six seconds by this mechanism, and it is particularly useful in localizing shunts or stenotic lesions. A movie of a bolus of dye going through the heart can disclose numerous features not suspected on the basis of still-film technics. This has been valuable not only in diagnosing pathologic anatomy, but also in adding to our understanding of the normal anatomy of the living heart.

CONCLUSION

The combination of technics and procedures now available to the cardiologist permits an accurate evaluation of the physiologic and anatomic features of cardiac disease. A precise diagnosis aids the surgeon if an operative procedure is planned. It aids the cardiologist in explaining the natural history of the disease to patients. The newer, more complex procedures have produced more complications and an increased risk to the patient, but it is the responsibility of the cardiac laboratory to make as accurate a diagnosis as possible, and the laboratory staff accepts the inherent risks so that the referring physician can be given a sound basis for recommendations to his patient.

Weak Staph Can Block Virulent Strains

Nasal inoculations of weak Staphylococcus aureus can prevent the subsequent acquisition of virulent, infection-producing strains of that bacterium, according to the report of a study conducted among volunteers at the federal penitentiary in Atlanta. The findings, summarized in the September issue of AMERICAN JOURNAL OF DISEASES OF CHILDREN, indicate that the method may perhaps be used to prevent staphylococcal infections in households and hospitals.

Virulent strains of staph are found among other normal bacteria in the noses of certain persons, and thus these individuals constitute hazards to their contacts and to themselves, it was pointed out. At present there is no known method of permanently eradicating virulent staph strains from all persistent carriers.

The study included 122 persistent staph carriers and 212 persistent non-carriers. Some carriers were given antibiotics that temporarily removed nasal bacteria, then they were inoculated with the weak staph strain, and finally they were challenged with the virulent strain. Other groups of carriers and non-carriers were used for comparison purposes.

Success in colonizing persistent non-carriers with the weak strain was significantly less than the success at colonizing the carriers who had been successfully pretreated with antibiotics, the researchers said. Antibiotic therapy had resulted only in a transient suppression of S. aureus, and when the drug therapy was not immediately followed by inoculation with the weak staph strain, the original S. aureus reappeared in most subjects. Conversely, the original strain only rarely recurred when a successful colonization of the weak strain had followed the antibiotic regimen.

The study provides "direct evidence" that nasal colonization with a weak staph strain interferes with the subsequent colonization of an infection-causing strain, the authors concluded. However, they said, conditions in a household or a hospital differ from those in a penitentiary, and the use of this technic to control staph disease in families or hospital personnel must await additional controlled observations.

Office Management of the Depressed Patient

A Panel Discussion

Dr. James S. Cheatham: There are really only two topics to discuss under the heading "Depression." First of all, there's the matter of recognizing the depressed patient or recognizing the presence of depression in the patient; and the second is the treating of the depression.

Now, I shall proceed to complicate matters. What I'd like to do is to make a few general comments, perhaps communicating my own attitudes and my own philosophies regarding the management of depression. Then I shall discuss the specific drug therapy in depression.

In my experience, depression is second in frequency only to anxiety among the psychological conditions that the physician encounters in his office. It may not seem so, for the physician doesn't always recognize it in his patients.

Depression is extremely difficult to define. It may be a symptom of some underlying physical condition, or it may be a primary entity. Crudely, I should define it as a psychophysiologic reaction having certain characteristic features such as slowing of motor activity, lowering of mood, agitation, anxiety, loss of interest in one's surroundings, disturbances of habit pattern, and in particular, the development of questions regarding one's individual value and worth. Associated with these feelings are usually a great number of rather vaguely defined physical complaints, the most important of which is fatigue.

I don't intend to bore you with a long discourse on the dynamics of depression, but I should like to call your attention to the fact that depressed people are angry people, and most particularly they are people who find it very difficult to express their anger. Indeed, it is necessary for them to turn their anger upon themselves. In the psychological treatment of these people, it is sometimes necessary for the physician to bring them to the point where they are comfortably able to ventilate or to express their anger. One psychiatrist has said that these people are unable to "fight effectively"—that they can fight, but they can't fight effectively. So what one has to do in treating such a patient is to help him become a little more effective in his battles with his spouse, his boss or whoever it may be.

I prefer to divide depressions into two groups—primary and secondary. By "primary" I mean that the depression is the primary process with which the physician must deal, and by "secondary" I mean that the depression is a symptom of an underlying physical illness or of a more severe mental disease.

DIAGNOSIS

Depression is basically a disorder of mood. The psychiatric textbooks describe it as an affective disorder, but psychiatrists disagree among themselves as to the definition of the word *affective,* so I think it's best for us to describe depression as a disorder of mood. The patient is sad, unhappy and despondent, but doesn't display any gross impairment in his level of consciousness.

The patient who presents with a disorder of thought—i.e., with thinking that is incoherent or disorganized, with some bizarre trends in his thinking, some inappropriateness and perhaps some evidence of hallucinations or delusions, but with no gross disorder in mood or in consciousness, one can suspect of having some condition such as schizophrenia.

A patient who presents a picture of some disturbance in the level of consciousness, who is confused, drowsy, somnolent, and in and out of contact, somewhat comatose and unresponsive, should alert the doctor to an underlying organic disorder. There may be a mild associated mood disturbance, but his basic problem is more likely to be organic.

Within the primary-depression category should be included the so-called transitory depressive experiences such as situational reactions or grief

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This discussion took place at the Mental Health Institute in Cherokee, on March 25, 1964, during a Seminar and Workshop for General Practitioners on the Aftercare of the Psychiatric Patient. Dr. Cheatham was director of psychiatric training at Cherokee but since has become superintendent of Moccasin Bend Psychiatric Hospital, Chattanooga, Tennessee; Dr. Chesnutt practices psychiatry at Spencer and is director of the Northwestern Iowa Mental Health Center there; Dr. Hennessey practices general medicine at Manilla; and Dr. Kersten practices psychiatry at Fort Dodge.

reactions. These are the types of difficulty that follow the loss of a family member, loss of employment, financial reverses or some extreme environmental change. As a rule, these reactions occur rather acutely, but are quite transient in nature and require very little in the way of treatment, other than support.

Also included in the primary category would be the so-called neurotic depressions, which occur in individuals whose neurotic personality structures are quite conspicuous.

A group of depressions have been labeled "psychotic" because of their greater severity of symptoms, bizarre quality of symptoms and impairment of contact with reality. This group can be subdivided into the manic depressive and the near-schizophrenic types.

Secondary depressions, I have classified as those reactions associated with or serving as symptomatic manifestations of intercurrent conditions. I recognize that it is sometimes quite difficult to distinguish between the cart and the horse—to decide which is symptom and which is effect. For instance, it has been observed that people who have a tendency toward depressive mood states have an increased incidence of upper-respiratory infections at the times of their depressions. Now whether the upper-respiratory infection triggers the depression, or vice versa, is a moot question. Likewise, I know that you are all familiar with the occurrence of some degree of depression following childbirth, surgery or severe trauma.

Depression is frequently a presenting symptom in organic brain disease or in toxic states involving the central nervous system, such as alcoholism or drug addiction, but here again we are dealing with some impairment in the level of consciousness.

I cannot overemphasize the frequency with which depression occurs in the older age groups, and the frequency with which it may conceal or be associated with a senile psychosis or an organic brain syndrome associated with cerebral arteriosclerosis.

As a general rule, when the patient presents himself to the physician complaining of some rather vague, ill-defined physical symptoms, and when all reasonable medical studies fail to reveal a clear-cut picture of physical disease, or when the evidence of physical disease is equivocal, it is useful and helpful to inquire as to whether or not the patient is depressed. I am quite likely to *ask* him whether he is depressed. The rewards of this type of inquiry are frequently astounding.

The physician should also be alert to the frequency with which depression develops in patients with chronic medical conditions. Take, for example, the terminally-ill patient who yet has several months to live. In that interval he can be expected to experience other illnesses, not infrequently of a depressive nature. Many studies have been done and many of you are familiar with the adverse effects that depression and anxiety have on the course of patients under treatment for tuberculosis. One can state, consequently, that the basic personality, the mood and the emotional state of the individual play considerable parts in how he handles a physical illness.

As I stated earlier, relatively few people will volunteer that they are depressed. Rather, they have to be asked. Also, many depressed people find it quite necessary to keep some distance between themselves and others, and it is therefore difficult for them to enter into a very close relationship with their physicians. I think we should be aware of this fact. The physician should respect the need which such a patient feels for maintaining his distance, and he shouldn't try to force himself on the patient. At the same time, however, the physician should indicate to the patient that he is available and willing to enter into such a relationship whenever the patient is ready to communicate.

It is unnecessary to mention the futility of telling the patient to stop worrying or to snap out of it—shades of Lucy Brown and five-cent psychiatry! Such exhortations are extremely irritating to the patient and therapeutically meaningless. Depressed patients present no end of problems to the treating physician. They can prove an endless source of frustration and anger. I think that at times the physician becomes apprehensive or anxious about the apparent chronicity of the depressive reaction, or about the patient's apparent failure to respond to treatment. Likewise, the physician can become anxious or concerned about the patient's failure to respond to treatment of some other condition when the intercurrent existence of a depressive reaction has gone unrecognized.

Depressed patients sometimes are extremely insistent in their demands for attention, and yet their negative attitude and lack of cooperation make it impossible for the physician to maintain a treatment program. Indeed, their behavior invites him to discard or reject them. In this connection, I have found it very useful to give the patient some explanation of depression, and to point out certain prerequisites to its treatment.

First of all, I explain that depressions are self-limited conditions—that they will run their courses and will resolve with the passage of time, irrespective of therapeutic intervention. All we can do as physicians is to modify the severity of the condition or to abbreviate it. We cannot cure depression. Likewise, I point out to the patient that the drugs and other treatment now available for the management of depression require considerable time before any clinical improvement can be discerned. I don't expect any of the drugs to become effective for two or three weeks, and frequently not for four to six weeks. During this period I encourage and support the patient. Inci-

dentally, it is therapeutically undesirable to start shifting the patient from one drug to another. The net result usually is that he doesn't take anything long enough to get any kind of benefit or effect from it.

When I suspect that a depressed patient is entertaining some suicidal impulses, I attempt to assure him of my availability, should he find himself in danger of succumbing to that sort of urge. By the way, I heard recently of an analyst who told his patient that if he killed himself, he (the analyst) would stop seeing him.

It is also important to understand and to communicate to the patient the fact that depressions may have positive as well as negative aspects. Not infrequently depression accompanies a major change in one's life situation, or serves as an indication of the individual's need to readapt his approach to life or to reorient himself. In this context I would describe depression as the withdrawal or diverting of one's psychic energies for the working through of some neglected intrapsychic business.

DRUG THERAPY

I should like to call your attention to Table 1 and to discuss briefly the specific drug management of depression. I must warn you that what I shall say represents my own very personal feelings. There is about as much agreement among psychiatrists regarding the drug management of depression as there is among surgeons on what approach to take through the skin to the appendix, or on what suture material to use.

Since the withdrawal of Parnate, which was an exceedingly effective and very popular antidepressant drug, there are now perhaps four most commonly used antidepressant agents: Tofranil, Elavil, Nardil and Marplan. In Figure 1, I have listed the indications for these drugs and the daily dosage. The top line is the therapeutic dosage, and the bottom line is the maintenance dosage.

Some recent studies indicate that the effectiveness of drugs in severely disturbed patients equals or exceeds the effectiveness of electric shock. There is no question that in mental hospitals today our use of electric shock is about one-tenth what it was a decade ago.

I have purposely refrained from including the patient with a mild depression in this table, for I think that the presently available drugs are sufficiently toxic and have such a number of side effects that one shouldn't use them in mildly depressed people for whom a little support and the use of some analeptic agent for a brief period will probably resolve the difficulty.

Here at Cherokee we use doses up to 300 mg./day of Tofranil. The average physician, I think, should start the patient whom he sees in his office on 25 mg. t.i.d., and after a week or ten days, if there has been no response, he should move him up to a total of 150 or 200 mg./day. In office practice, I wouldn't encourage doctors to go as high as 300 mg./day. The maintenance dosage is somewhere between one-third and one-half of the daily therapeutic dose.

Particularly in the agitated or very anxious patient, it is frequently useful to combine an antidepressant with one of the phenothiazine drugs. Mellaril or Stelazine works admirably. I have found that prescribing Stelazine, 2 mg., two, three or four times a day works very well for office practice. I would not suggest using Thorazine in such cases. Thorazine may mask or obscure depressions, or have a further depressive effect on

TABLE 1

USEFUL ANTI-DEPRESSANT AGENTS

Drug	Indications	Total Daily Dosage (Second line is maintenance dose)	Remarks
Tofranil (imipramine)	All types of depression, moderate to severe	75-300 mg./day 25-100 mg./day	In agitated or disturbed patients, combine with phenothiazine, but do not use with Thorazine.
Elavil (amitriptyline)	All types of depression, moderate to severe	75-150 mg./day 25-75 mg./day	Use in same manner as Tofranil. Onset of action is perhaps slower than Tofranil's, but smoother.
Nardil (phenelzine)	All types of depression, of moderate degree	45-75 mg./day 15-45 mg./day	A monoamine oxidase inhibitor. Use with caution. Not too effective in severe depression.
Marplan (isocarboxazid)	Same indications as for Nardil	30 mg./day 10-20 mg./day	A monoamine oxidase inhibitor. Use with caution. Not too effective in severe depression.

Notes:
1. Use of any of these agents is not recommended in mild or transient depression.
2. Use of monoamine oxidase inhibitors is suggested only after Tofranil or Elavil.
3. These are not antipsychotic drugs.

the patient. I'd make an exception, however, for the highly agitated patient in whom the use of Thorazine for the first few days perhaps is indicated to control agitation. The uses and indications for Elavil are much the same as for Tofranil. It has been my experience that the onset of clinical response to Elavil is much slower than that to Tofranil.

The next two drugs—Nardil and Marplan—are monoamine oxidase inhibitors. At the present time I feel that the use of one of these should be reserved for cases where one has tried either Tofranil or Elavil and has found that the patient failed to respond. In other words, I don't suggest either of these drugs as the primary or initial antidepressant agent. Rather, I feel that they should be reserved as "back-up" drugs and not used as "front line fighters."

MAO inhibitors are not antipsychotic drugs. Most of us have found that they do not have a specific antipsychotic action, and that when one is seeking an antipsychotic effect he has to fall back on drugs in the phenothiazine series.

THE IMPORTANCE OF LISTENING

Dr. J. C. Chesnutt: To the list of symptoms characteristic of individuals subject to depression that Dr. Cheatham has given you, I should like to add one or two that are commonly described by the people who come to me.

In our offices, we're not dealing with "aftercare" patients; we're dealing with "before-care" patients. We're largely in the business of keeping people out of hospitals. People who come to see us are a bit defensive about their difficulties and a bit reluctant to describe their feelings. In fact it's characteristic of such people to have difficulty in their interpersonal relationships, including their relationship with their doctor. Thus I think it's wise, when the patient appears defensive and guarded, as he often does, for the doctor to offer an introductory comment or two of a general nature—about the weather, if he can think of nothing else that he has in common with the patient—to show him that a physician is a human being, too.

In trying to learn what is causing the patient's difficulty, the most important thing for one to do is to listen—not to think of a question to ask or of some advice to give, but to listen. The best way to initiate the listening process, after one has led the patient to decide that he is facing another ordinary human being, rather than a judge or a policeman, is to ask him an ambiguous question such as "Well, how are things going?" "How did you happen to come to see me?" or "What can I do for you?"

Depressed patients frequently tell me that they have lost pleasure in their usual pursuits. They no longer enjoy watching "Gunsmoke"; they can't enjoy other things which previously gave them pleasure; they can't enjoy their food.

I think it's very wise for physicians to be well acquainted with the drugs that can be used in palliating specific symptoms, and to impart this knowledge to patients when they are suffering from chronic tension headaches, chronic diarrhea and similar difficulties.

What happens when a patient tells his physician about his neurotic symptoms? First he says that he has been troubled by them for a long time and that they have been constant. Then, as he talks, it becomes apparent that he has *not* been troubled by them all of the time, but that they have been occasioned by his relationships to people, and he says that everybody seems to make him nervous. His dealings with people give him headaches, upset his stomach or give him diarrhea. But then he particularizes, and the doctor learns that it *isn't* everybody who affects him in these ways. Only some of the people with whom he comes in contact have provoked these uncomfortable situations. As he further explores his feelings, he finds that the people who annoy him have certain characteristics in common. All of them, perhaps, have been persons in authority—employers, law officers, or military officers while he was in Service.

Now a neurosis—and depression is an example of neurosis—is a kind of mask for some emotion. The neurotic individual is preserving himself from an awareness of the emotion. He does this unconsciously and without wishing to do so. It happens automatically.

Endogenous depression occurs as a result of conflicts within the person; exogenous depression occurs as a result of an environmental stress, usually the loss of some valued object. Dr. Cheatham mentioned the grief and mourning following the loss of a beloved relative or friend. Such grief is perfectly normal and in no way neurotic; but if the mourning continues for many years, it takes on a neurotic characteristic and usually means that the individual is masking some angry feelings toward the dead person.

When we attempt to help such individuals, we should help them summon the strength to become aware of the feelings that they have repudiated in themselves.

Many ex-farmers in our Iowa towns have been hard workers from early morning until night, throughout their working lives. In the evening, they have gone to hear lectures by experts on farming methods. But then, on reaching retirement age, they have moved to Storm Lake or to Cherokee, and their sons have taken over their farms. Or perhaps they have sold or rented their farms. In and around their city homes they no longer have adequate outlets for their energies, and they begin to feel worthless. Because they no longer have hard work at which to expiate whatever guilt feelings beset them, they turn in on themselves and become depressed. Such people

should never have retired. The wiser ones of them have kept in contact with their farms.

Many symptoms are specifically related to feelings of anger, and depression is one of them. Anxiety is often related to depression, and very typically tension headache and spastic colitis are related to feelings of anger.

I suggest that each physician should schedule some time to listen to such people. The doctor should encourage them to tell him anything that is on their minds, anything that seems important to them. At first they'll usually say "I can't think of anything," but then their feelings will start to come through, and that eruption can be quite helpful to them.

THE DEPRESSED PATIENT AND THE G.P.

Dr. John M. Hennessey: I think that Dr. Cheatham and Dr. Chesnutt have covered everything except the aspect of depression problems that is peculiar to the general practitioner in a small town. If you are such a man, the depressed patient who come to you is your next-door-neighbor or the druggist down the street. Oftentimes, his wife has already told you that John isn't his usual self, but it is difficult for you to find out just what is causing the trouble.

I like to be a little abrupt and straight to the point, so I ask him whether he is depressed. Often I know the circumstances that are causing some of the trouble, but I ask for particulars anyway.

If the patient seems severely depressed, I ask whether he still thinks life worth living, and if he seems to have some doubts about that question, I ask whether he thinks we ought to do something about his difficulties. If he does, then I think it's time to get him to a psychiatrist.

I have my problems in getting the patient to go to a psychiatrist and in getting his family to take him to such a specialist. The general public is beginning to realize that our psychiatric hospitals are like general hospitals, and that many people now go to them voluntarily. Yet an aura persists, for the public still feels that there is a stigma about having a mental illness. This is a real problem that we general practitioners have to face.

I worry about the possibility that a depressed patient will commit suicide. Indeed suicidal depression seems to be a contagious disease. When a suicide has occurred in our area, I'm a little more cautious with my depressed patients because sometimes they think Jim may not have had such a bad idea when he committed suicide. I think we need to spend more time with such people and to give them the reassurance they need.

Another real problem that we have is to decide which patient needs to be hospitalized and which one needs to see a psychiatrist—especially if seeing a psychiatrist will involve a series of long trips or a lengthy stay away from home.

THE POTENTIALLY SUICIDAL PATIENT

Dr. Paul M. Kersten: I want to talk about suicide and attempted suicide, for these are really medical problems and we are coming into a time when, curiously enough, suicide is increasingly common. (It is most common in the spring, and second most common in the fall.) I think it's important for every physician to realize that every severely disturbed patient is a potential suicide. Suicide, over the country as a whole, is approximately the tenth most common cause of death. Many highway "accidents" really are unsubstantiated suicides. Admittedly, the statistics are inaccurate. By the same token, families often try to hide suicide or suicidal tendencies from the family physician.

The physician has to be doubly aware of this possibility in the patients whom he is treating, and if he suspects such a tendency, he must follow it up. He must make an effort to elucidate such tendencies, overt attempts or symptoms of emotional illness, no matter what happens to be the somatic overlay.

There are 3,000 known suicides each year in our country, and for every successful suicide there are approximately five attempts. Each such individual is an emotionally disturbed person, or is sick and needs treatment. Suicide or attempted suicide is the act of an emotionally ill person.

Suicide does not respect sex or age, for it can occur in any type of emotional illness and at any age. It so happens, however, that the greatest incidence is between ages 50 and 65 years. That is the period of depression. General practitioners and specialists other than psychiatrists most often are first to see patients with involutional depression of psychotic proportions.

What can the physician do? How can he recognize the possibility of suicide in any of his emotionally disturbed patients, particularly his depressed patients? If he suspects the inclination, he should ask the patient about it. I concur with Dr. Cheatham that a straight line is the shortest distance between two points. I personally agree with his directness. The patient is often relieved that his physician has thought of this possibility and that he has asked tactful and understanding questions designed to uncover the inclination.

There is a common misconception—and I think it is one which many physicians share—that people who talk about suicide never attempt it. That is wrong! A very high percentage of attempted suicides or actually successful ones occur after the patients have made their intentions known to their friends, family, physician, minister, etc.

A physician who is uneasy about the possibility that a patient is a potential suicide, or suspects that he is going to attempt suicide, should immediately seek a psychiatric evaluation and treatment for him. The patient needs the protective environment that a hospital affords.

The doctor's efforts at prevention will be most fruitful if he recognizes the signs of depression early, particularly during the involutional phase of a patient's life. If the mood change is accompanied by insomnia and agitation, the risk is increased. Often these patients describe marked periods of tension and restlessness. At times they wring their hands, pace the floor and express ideas of self-depreciation, guilt and worthlessness. These symptoms make up the picture of agitated, involutional depression. Such a patient is less likely to be self-destructive when he is in the profound depths of depression than when he is just entering it or coming out of it. This is small consolation, however, for all such patients must be considered potentially suicidal and must be treated as such.

A variant of the clinical picture that I just described is the masked involutional depression. Patients of that sort show varying degrees of depression, yet at the same time complain bitterly of a variety of physical difficulties—often, interestingly enough, referable to the gastrointestinal tract—for which no organic bases can be found. What they are expressing are somatic delusions. Even though these symptoms lack physical bases, however, they are real enough, and the physician does well to recognize them as such and to establish an adequate treatment plan, including psychiatric evaluation and treatment, in a hospital.

People who express fear of hurting themselves or others should be paid strict attention. These fears, expressed to the family physician, should be interpreted as cries for help. They indicate the patient's recognition that his own impulses are threatening to overwhelm him.

What are the specific steps that a physician should take in any such situation? First of all, it is necessary for him to keep the patient under direct and close observation at all times, while he is arranging for psychiatric evaluation or for transfer to a psychiatric hospital for evaluation and treatment. It will be necessary for him to enlist the aid of the patient's family, friends, nurses, hospital aides, etc. in this thorough watching of the patient. Everything with which the patient might injure himself should be kept out of his reach. The proscribed items should include knives, razors, belts, ties, scissors, nail files, radios, glassware, eyeglasses and the like. If the patient is in a general hospital, he should be in a single room, as close to ground-level as possible, and each of his activities should be closely supervised.

This complete watchfulness demands first that the physician be aware of the self-destructive potentials in certain of his disturbed patients, and then that he be aware of all the hazards to the life that he is attempting to save. The situation is a true medical emergency, as urgent a one as any in the whole field of medicine.

QUESTIONS AND COMMENTS

Daniel S. Egbert, M.D., Fort Dodge: These depressed patients tend to be angry patients. How would you advise handling this anger when it is turned against the doctor?

Dr. Kersten: That's a good point that you've raised. In the psychotherapeutic treatment of depressed patients, it's not unusual for the patient to become very angry with his physician. It is a healthy phenomenon, but the doctor must be prepared to respond in an extraordinary fashion. You should be thankful that the patient has shown that he can direct his anger at you. His angry expressions are an indication that he is making some improvement in his depressed state. When a physician is trying to work with a patient psychotherapeutically, such an outburst *should* come, and the doctor must not be upset by it.

Dr. Cheatham: That is a point which I mentioned earlier. Patients, particularly depressed ones, by their negativism and their uncooperativeness will invite the physician to reject them—will invite him to contribute to the punishment that they have been inflicting upon themselves. If the doctor were to strike back, he would accentuate the patient's illness.

Dr. Chesnutt: A more important problem of this sort is the patient's tendency, during the recovery period, to turn his anger toward his family or friends. Often the doctor will be a temporary target, but we physicians are strong people. We don't take offense if an epileptic patient clips us during a convulsion or if a patient inadvertently splashes vomit on us. Aggression from a depressed patient is the same sort of thing. We should be ready to accept it.

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SUMMARY OF CLINICAL FINDINGS

A 67-YEAR-OLD WHITE MALE cattle buyer was admitted to the University Hospitals with a one-week history of indigestion and anorexia. Five hours before entrance to the hospital, he had become nauseated and light-headed, and had passed a mixture of clotted bright-red blood and tarry stool. Three similar stools had followed over the next few hours. He said that he had become tremulous and sweaty following those episodes. He also stated that he had been nauseated during the preceding week, and that his indigestion had been aggravated by eating. He denied any emesis or hematemesis. He had experienced no abdominal pain, but said he had suffered some bloating and gassiness, which was relieved by belching and the passing of flatus.

Forty years earlier, Dr. Sippy, of Chicago, had told the patient that he had a peptic ulcer. The diagnosis had then been confirmed at the Mayo Clinic, and he had been treated by the Sippy regime. Through the years, he had continued to have vague indigestion that he relieved by taking commercial antacids. Occasionally he had restricted himself to an "ulcer diet."

He had suffered from constipation and had treated it by eating a bran-type breakfast food, and usually he had taken a laxative at least once a week. He denied any change in the character of his stools, but said that off and on, when he had been severely constipated, he had passed a small amount of bright-red blood, noticeable only on the toilet paper.

He had been jaundiced as a young man, and six years before admission he had undergone a cholecystectomy. At that time an upper gastrointestinal series had been taken and his duodenum had been described as normal.

Seven years before admission, he had undergone a transurethral resection for prostatism. Thereafter he still had nocturia of two or three times, but denied having had hematuria or pain. He had had one recent kidney infection, which had been treated by nitrofurantoin (Furadantin). He also said his local physician had given him chlorothiazide (Diuril) intermittently for a mild hypertension. He denied any bleeding tendencies in his family. He drank hard liquor occasionally, but had never been a heavy drinker.

On admission to the hospital, the patient was somewhat pale, but in no particular distress. His blood pressure was 150/80 mm. Hg, and his pulse rate was 88/min. The lungs were clear to auscultation and percussion, and the heart tones were distant but otherwise normal. The abdomen was flat and soft, the solid organs were not palpable, and no masses were present. Normal peristaltic sounds were present. There was no evidence of jaundice. Rectal examination revealed a 2+ benign prostatic hypertrophy.

His urine had a specific gravity of 1.020 and a pH of 5.0, and it was negative on chemical and microscopic examination. The hemoglobin value was 14.5 Gm./100 ml., and the white blood cell count was 6,200/cu. mm. A peripheral blood smear showed 81 segmental neutrophils, 17 lymphocytes and 2 monocytes. The hematocrit was 35 per cent.

A nasogastric tube was passed, but returned only whitish mucoid material. Sigmoidoscopic examination to 22 cm. revealed only old, black, dried-out clots with no evidence of fresh bleeding or any mucosal lesion. A blood-volume determination with the Volumetron, using radio-iodinated human serum albumin, showed 4.27 liters, in contrast to an expected blood volume of 5.58 liters, based upon optimal weight.

After two units of blood had been administered, the patient's hemoglobin level was 14.5 Gm./100 ml., his red blood cell count was 4,670,000/cu. mm., and his white blood cell count was 8,750/cu. mm.

An upper gastrointestinal series was interpreted as showing a small hiatus hernia with a probable ulcer crater within it. The duodenal bulb was in a vertical rather than in a horizontal position, and pointed downward, and the duodenum and most of the jejunum were situated on the right side of the abdomen rather than on the left.

On the afternoon of the day of his admission, the patient again passed several bloody stools.

His blood pressure dropped to 60 mm. systolic, and his pulse rate rose to 96/min.

Rapid blood replacement of two units was then instituted, and an emergency laparotomy was performed on this same day. The entire gastrointestinal tract from the esophagus to the rectum was examined. The colon was filled with fresh blood, but there was no blood anywhere within the stomach or small bowel. The hiatus admitted two fingertips with ease, but the herniated portion was not stuck in the sac. Through enterotomy incisions, the entire small intestine was examined with a sigmoidoscope. No blood was found, and there were no petechiae or telangiectatic spots. There was an enormous amount of blood in the right colon. A gastrotomy incision was made, but blood was not found in the stomach, and no ulceration was found.

Because fresh blood appeared to be localized to the colon and because the right colon appeared to be the site of most of the bleeding, a right hemicolectomy was carried out.

The patient's immediate postoperative course was uneventful, but approximately 24 hours later he had another massive bleeding episode and passed a bloody stool. He was found lying in a pool of dark-red blood that had been passed per rectum. His skin was cold and clammy, and his pulse and blood pressure were unobtainable. Blood was rapidly pumped in, but he did not respond. Terminally, he had a coffee-ground emesis of approximately 100 ml.

During his stay in the hospital, the patient had received a total of 3,500 ml. of blood.

CLINICAL DISCUSSION

Dr. S. E. Ziffren, Surgery: Mr. Reinhard will discuss the case for the students.

Mr. C. J. Reinhard, junior ward clerk: We believe that the patient had a peptic ulcer located in the diaphragmatic hiatal hernia, that it penetrated a blood vessel, and that he died from cardiovascular collapse secondary to massive blood loss. A lesion of the large intestine was difficult to rule out on the basis of what was found at operation and on the basis of the patient's history. The fact that a right hemicolectomy was done as a curative procedure is a strong indication that the surgeon regarded the colon as the site of pathology, even though no lesion was described in the surgical findings. However, on the basis of the essentially negative sigmoidoscopic examination prior to operation, and because the patient's death was due to further massive hemorrhage following the hemicolectomy, we concluded that the GI tract below the level of the ileocecal valve did not contain the site of bleeding. The small intestine other than the duodenum is infrequently the site of massive bleeding, and at laparotomy the patient was adequately examined through multiple enterotomy incisions. Therefore, we don't believe the cause of bleeding was located there.

A Meckel's diverticulum is a well-known cause of bleeding. However, we don't believe that a Meckel's diverticulum could have been overlooked.

The duodenum quite often is the site of massive hemorrhage in peptic ulcer cases. However in this patient the duodenum was found to have been normal on a gastrointestinal series and on direct surgical exploration. Again, we must look for another possible site for bleeding.

Possible causes of hemorrhage originating in the stomach would include the following: (1) a defect in the intrinsic clotting mechanisms such as is found in hemophilia or Christian's disease; (2) a deficiency of blood platelets such as is found in the various types of thrombocytopenia; and (3) defects of the capillary endothelium such as are found in von Willebrand's disease or in hereditary hemorrhagic telangiectasia. We have ruled these out on the basis of the patient's age, sex, lack of a positive family or personal history, and absence of a bleeding problem at operation.

Gastric cancer, polyps and obvious ulcers were ruled out in this patient by gastrotomy. The presenting symptoms were characteristic of gastric cancer, but no mention was made of weight loss, the present illness had been of no more than a week's duration, and no lesion was visualized or felt. Esophageal varices are a common cause, and were ruled out because of a lack of history of symptoms referable to liver disease, except for the episode of jaundice the patient had had as a young man, and because of the absence of physical signs of cirrhosis.

It should be mentioned that at the time of the patient's admission it apparently wasn't considered necessary to run any liver-function tests.

The commonest cause of gastrointestinal hemorrhage is peptic-ulcer disease. There are many areas in which peptic ulcers can occur, including the duodenum and the stomach. An ulcer may also occur in a hiatal hernia. This patient had demonstrable x-ray and surgical findings of a hiatal hernia, and x-ray evidence of a probable ulcer within it. A solitary ulcer located there or in the distal esophagus can often be an unrecognized source of massive hemorrhage. Thus, in conclusion, we believe the patient had an ulcer located within his hiatal hernia, that his fatal hemorrhage occurred there, and that it resulted in cardiovascular collapse and death.

Dr. Ziffren: Do you have any questions you want to direct to Mr. Reinhard? If not, Dr. Buckwalter will discuss the case.

Dr. J. A. Buckwalter, Surgery: The case for discussion is an excellent example of a difficult problem that too frequently challenges and frustrates both internists and surgeons. I suggest that Dr. Kent will tell us, in a few minutes, that the

gastrointestinal tract was filled with blood, at postmortem examination, and that no cause was found for that phenomenon. That, at least, would be the logical prediction for me to make, but since this is a CPC case, it probably will not prove to be true. In 1961, a Mayo Clinic study of 100 explorations for massive gastrointestinal bleeding was reported.[1] In 30 of the patients, a positive diagnosis had been made at the time of operation; in 54 there had been no satisfactory diagnosis; and in the other 16 cases, the findings had been equivocal. The literature provides reports which agree and others which disagree with those figures. The percentage of cases of gastrointestinal bleeding in which a diagnosis hasn't been established at surgery reflects the diligence of the pre-operative work-up and the competence of the surgeon. Thus the odds are very poor that the pathologists will have found a satisfactory cause for the bleeding in this case, in which there was a negative exploration.

I shall discuss the findings recorded in the protocol which seem important to me; I shall suggest several additional examinations that perhaps should have been done; and I shall go through the differential diagnosis, pointing out why, in my judgment, none of these diagnoses is tenable.

The patient developed severe bleeding soon after his admission, had an emergency operation six or eight hours later, and died of an exsanguinating hemorrhage 24 hours after admission. The first substantial bleeding apparently had occurred five or six hours before his admission to the University Hospitals. Nausea, light-headedness, and stools containing clotted and bright-red blood suggest massive bleeding and impending shock. When admitted to University Hospitals, the patient had a blood pressure that seemed to be normal. However, because of his history of hypertension, it may have been down. His pulse rate was normal. His blood volume was down 1,000 cc. The physicians who saw him at that time probably thought he was on the verge of shock, and therefore gave him two units of blood even though there was no bleeding at that time. The absence of any indication of bleeding in the patient's past medical history or family history is very important. Recurrence of bleeding soon after admission was the indication for an emergency operation. The clotted and bright-red blood in the stools is consistent with massive bleeding either from the upper or the lower gastrointestinal tract. Duodenal ulcer was the working diagnosis at the time of operation. The findings recorded in the protocol suggest this as the probable diagnosis, even though no ulcer was demonstrated by the upper gastrointestinal x-ray study.

What about the indication for right hemicolectomy? The patient was explored from the esophagus to the rectosigmoid colon, and no lesion was found. The only positive finding was a large amount of blood in the right colon. None was noted in the small bowel, stomach or esophagus. It was reasonable to assume that there might be a lesion in the right colon, and therefore that the right colon should be removed. The surgeon was not convinced, but he hoped that a lesion would be found. As it turned out, the operation didn't help. It is possible but not probable that the final bleeding occurred from the suture line. It is probable that the first cause of bleeding was also the final cause.

Now, I propose to discuss the various diagnoses which should have been considered in this case, more or less in their order of probability. As I indicated earlier, there is no convincing evidence to favor any diagnosis. First, let us consider uremia. A BUN and a creatinine should have been done at the time of the patient's admission. The BUN goes up with gastrointestinal bleeding. However if we are correct in thinking that bleeding started only six hours prior to his admission, his BUN would not have been very high from bleeding alone. If he had been uremic at admission, the BUN would have made that diagnosis. Urinary-tract disease is suggested by the history of a transurethral obstruction and urinary-tract infection. The absence of a disturbance in consciousness, of edema or of any other clinical clue suggestive of renal insufficiency, however, constitutes evidence against this diagnosis. Uremia, nevertheless, should always be thought of in a case such as this.

What is the mechanism of bleeding with uremia? Platelets may be decreased in number and in effectiveness in the coagulation mechanism. A capillary defect may be associated with uremia.

For my second diagnosis, I suggest a disturbance in the coagulation mechanism. The strongest argument against this possibility is the absence of a history suggestive of a coagulation defect. There were no physical findings suggestive of bleeding. Coagulation studies were perhaps indicated at the time of the patient's admission. These should be done, when possible, before blood is given, for blood transfusions complicate the interpretation of coagulation studies. With a negative coagulation history, there is usually no indication for elaborate coagulation studies such as are done in Dr. Hoak's laboratory. A partial thromboplastin test and a platelet count should have been done. These tests are simple and inexpensive, and are quick and helpful. They are more meaningful than the clotting or bleeding times. The partial thromboplastin test, it has been reported, detects more than 95 per cent of coagulation defects.[2] However, it is useful to remember that 70 per cent of difficult bleeding problems are diagnosed on the basis of history; 20 per cent on the basis of the physical findings; and only 10 per cent on the basis of laboratory tests.

Now let us return to the most obvious diagnosis.

The patient had "solid gold" credentials for duodenal ulcer. Better authorities than Dr. Sippy and the Mayo clinic do not exist. Yet, no duodenal ulcer was found at operation. The surgeon looked long and hard for the ulcer. It is possible, but unlikely, that he missed an ulcer farther down in the duodenum. Gastritis, gastric ulcer, gastric carcinoma or some other lesion in the stomach could have been missed, but it is unlikely. Along with the patient's old history, the events of the week preceding his admission to the University Hospitals suggested duodenal ulcer.

In passing, here is an important point. When confronted by a patient with a problem such as this, one should pass a nasogastric tube as a diagnostic maneuver. That was done when this patient was admitted. A failure to aspirate blood is evidence against upper gastrointestinal bleeding, but does not exclude it.

What about the diagnosis of bleeding from the ulcer demonstrated in the hiatus hernia? This is unlikely. May we see the roentgenograms?

Dr. F. M. Behlke, Radiology: On reviewing the upper gastrointestinal series films, I don't have anything to add to what is in the protocol. There appears to be a small esophageal hiatal hernia present, and on several films a small fleck of barium remaining at the level of the hiatal hernia can be suspected of representing an ulceration. The stomach is high and transverse, and the jejunum, as you will note, appears in the right hemi-abdomen, whereas normally it is to the left of the midline. The remainder of the study appeared negative.

Dr. Buckwalter: It is most unusual for an esophageal ulcer to bleed massively. Again, the absence of blood in the stomach is against this diagnosis. Esophagoscopy is sometimes useful, but I don't think it would have helped here. The flexible fiberoptic esophagoscope is more easily and safely passed than the standard rigid esophagoscope, and is of particular value in the critically ill patient.

More common than bleeding from a hiatal hernia is bleeding from esophageal varices secondary to portal hypertension and cirrhosis. There is nothing to suggest portal hypertension in this case. The protocol took note of an occasional drink of hard liquor. I *hope* that was not significant! No spider telangiectasia or large liver was noted. When cirrhosis is a good possibility, a blood ammonia and/or a bromsulfalein test may be diagnostic.

How about the colon? The failure to note a gross lesion on sigmoidoscopic examination and at operation does not exclude the possibility, but it makes it most unlikely. The commonest cause of massive bleeding from the colon is carcinoma, but this is rare. About 10 to 15 per cent of the patients who have diverticulitis bleed at some time during the course of their disorder, but the bleeding is rarely massive. Dr. Hickey reported an unusual case a few years ago of erosion of the inferior epigastric artery secondary to diverticulitis, with massive bleeding,[3] but there is nothing in our case to support such a diagnosis.

Now, small-bowel lesions. A Meckel's diverticulum is a most unlikely diagnosis. This lesion would surely have been noted by the surgeon at the time of operation. Although the patient was old for that entity, it is occasionally seen in people of his age. There could have been a leiomyoma or other neoplasm of the small bowel. Telangiectasis in the small or large bowel, or anywhere in the gastrointestinal tract, could explain such bleeding.

Rarely, small-bowel diverticuli bleed. There have been reports of aneurysms of the splenic and other small arteries associated with massive bleeding. This is a diagnosis which fits very nicely, particularly since this is a CPC case. However, I can't really believe it is the correct one. The patient's history is good for biliary-tract disease. There is the story of jaundice at some indeterminate time when he was a young man. His gallbladder was removed six years before this admission. The symptoms during the final week of his life were more suggestive of biliary-tract disease than of ulcer: indigestion aggravated by the taking of food, anorexia, bloating, gassiness, belching, passing of flatus.

I suggest that this patient could have had hematobilia. This diagnosis could be consistent with the absence of findings at the time of operation. Arteriosclerotic aneurysms of the hepatic artery and its branches are the commonest cause of hematobilia. The cardinal signs of this rare disorder are upper right quadrant pain, jaundice, and hematemesis or melena.

In conclusion, I must abandon this diagnosis and come back to my initial statement. In my judgment the most plausible diagnosis in this case is *no* diagnosis. I predict that no satisfactory cause for the final massive exsanguinating hemorrhage that filled the entire gastrointestinal tract could be found at postmortem examination.

Unidentified questioner: How do you explain the fact that so much of the gastrointestinal tract was on the right side?

Dr. Behlke: In non-rotation of the intestinal tract, the small intestine will appear in the right hemi-abdomen and the colon in the left hemi-abdomen. I don't know whether this anatomic configuration is what this patient had or not, since to answer that question one would have to evaluate the entire GI tract with barium. It is possible that an upper-GI series at a later date might show the jejunum in its normal position.

Questioner: If the patient were bleeding from the upper-GI tract, could he have had blood coming out of his rectum within 24 hours after his operation? Would he have peristalsis so soon?

Dr. Buckwalter: Yes.

Dr. T. H. Kent, Pathology: The surgically ex-

cised portion of bowel consisted of 60 cm. of colon and 6 cm. of terminal ileum. No definite lesion was seen, either grossly or microscopically, in this specimen. The first slide shows the normal-appearing mucosa. You can see that the surface is covered by normal epithelium, and there is no significant increase in inflammation.

At necropsy, the main findings were massive hemorrhage at all levels of the gastrointestinal tract, and extensive recent pulmonary hemorrhage. There was a total of 400 cc. of blood in the stomach, and the intestines contained an immense amount of dark-red blood. Multiple small petechiae were seen in the jejunum and ileum, and the colonic mucosa appeared hemorrhagic. Microscopic examination of the GI tract revealed acute superficial inflammation in the esophagus, a normal gastric mucosa and foci of mild inflammation in the small intestine. In the colon, we found congestion, hemorrhage, inflammation and probably early necrosis of the mucosa.

The next series of slides will illustrate these changes. The esophageal mucosa has indistinct epithelium, and the superficial portion is infiltrated with neutrophils. The glands of the stomach are essentially normal. The chief and parietal cells are clear. There are some mild autolytic changes. The submucosa of the small intestine reveals a focal infiltration of leukocytes, which is something of very recent origin. A thick-walled arteriole is seen. The colonic mucosa shows more extensive inflammation. All these layers are infiltrated with neutrophils, and the vessels are distended. These findings in the colon might be difficult to interpret if we didn't have the operative findings. In this man who bled for only a few days, it might be assumed that this inflammation was the cause of the bleeding, had we not had a normal surgical specimen. But in the light of the findings from the resected specimen, I believe these changes occurred after the operation, possibly as a result of the trauma of the operation and the agonal events that were going on.

The lungs weighed 800 Gm. each, and showed extensive hemorrhage in the dependent portions. A section of the lung exhibits very extensive hemorrhage, and in the margin of the hemorrhagic areas, the alveoli are filled with edema fluid. A higher-power view of a different area of the lung shows the alveoli filled with debris and small, dark structures which are gram-positive cocci. The culture of the lung grew out Escherichia coli. These pulmonary hemorrhages, with very little inflammation, probably represent an early hemorrhagic pneumonia of the aspiration type. The only other significant disease in this patient was arteriolarsclerosis and mild cardiac hypertrophy—findings which correlate with the clinical history of mild hypertension over a number of years. The next two slides will illustrate the arteriolarsclerotic process. A peri-adrenal arteriole has a thickened media, and the intima shows some fibrosis and endothelial proliferation. A section of kidney shows another sclerotic arteriole. The patient's arteriolarsclerotic process did not damage the kidneys significantly, however, and apparently he was not in renal failure. The postmortem BUN was 65 mg. per cent. This value is usually much higher in postmortem blood than in antemortem. Some other incidental findings were a dilated common bile duct and absence of the gallbladder, but there was no evidence that there had been hemorrhage into the bile duct.

In summary, we have a case of massive, acute gastrointestinal hemorrhage of undetermined cause. Death resulted from continued bleeding following resection of the colon.

I should like to take a few minutes, now, to discuss three aspects of this problem. First, for those of you who are not very familiar with autopsy procedures, I shall explain what we look for and the problems of interpretation in a case of massive gastrointestinal hemorrhage. Second, I shall mention some other possible causes for this hemorrhage. Third, I shall present some statistics concerning gastrointestinal hemorrhage of unknown cause.

The autopsy examination of the GI tract in a case of gastrointestinal hemorrhage is no different from a routine examination, and consists of careful inspection of the external and luminal surfaces of the tract from the upper esophagus to the anus. The problem of autolysis is often brought up, but usually it is not a great problem if the necropsy has been performed within a reasonable time—say about 12 hours—if the body has been refrigerated during the interval between death and autopsy, and if the prosector handles the tissues carefully. I'd like to emphasize this last point. Rough handling and washing of the bowel will obscure the morphology much more than will autolytic changes alone. Most lesions which produce hemorrhage, such as chronic ulcers, tumors and chronic inflammations, present no difficulty in diagnosis.

I shall now mention a few conditions which may present difficulties in autopsy diagnosis or interpretation. A hiatus hernia will be missed unless it is specifically felt for early in the examination, before the diaphragm is removed. In this case, there was nothing in the protocol about a hiatus hernia, except for the statement that there was no evidence of internal or external hernia. Consequently, I don't know whether the prosector looked carefully for a hiatus hernia. Esophageal varices are sometimes difficult to demonstrate. They collapse as soon the the blood vessels are cut and the blood runs out. Varices should be looked for before the heart is opened. The esophagus can be clamped or tied above and below, so that the varices will continue to contain blood and will be easy to see. However, the exact site of bleeding from these varices is rarely demonstrated.

Bleeding can also occur from superficial ulcerations of the lower esophagus. This is a very common agonal phenomenon, particularly in patients who have had nasogastric tubes or who have been vomiting. The distal esophagus will present a mottled pattern of superficial ulceration, and most such patients do not bleed. If we see this, and if we have no other cause for bleeding, it is very difficult for us to tell whether or not this was the actual site. The gastric mucosa may bleed from acute superficial erosion, but as in cases of esophageal ulceration, it is again difficult to decide whether this was an agonal event or whether the clinical hemorrhage really occurred from this site. Diffuse gastric hemorrhage sometimes is associated with atrophic gastritis, but no discrete bleeding sites are demonstrated at autopsy in such cases. Therefore, the presence of atrophic gastritis doesn't necessarily explain the bleeding, unless the patient has been operated upon and diffuse oozing from the gastric mucosa has been seen. The lesions of the lower GI tract are much less frequent as causes of massive bleeding and present fewer difficulties in diagnosis, although diverticulosis may present some problems. In general, a carefully-performed autopsy should not miss any gross lesions that might be responsible for hemorrhage.

What other conditions might cause gastrointestinal hemorrhage without presenting any definite anatomical lesions? One of the obvious ones is a clotting disorder, and I think Dr. Hoak will go into problems of that sort. I might mention that in the literature that I reviewed, these problems were rarely mentioned as causes of massive gastrointestinal bleeding. Another condition that might be considered is hypertension. Hypertensives bleed from the nose and they bleed into the brain, but I haven't heard of hypertension as a cause of GI bleeding. I was able to find one article reporting a large series of cases which showed an increase in hypertension, arteriolarsclerosis and cardiac hypertrophy—all parts of the same process—in patients with gastrointestinal hemorrhage of either known or unknown cause.[4] Thus, hypertension may be predisposing, or may increase the chance of bleeding, but I shouldn't want to base any definite opinion on the statistics presented in just that one article. This problem could stand further study.

Let us now turn to some of the statistical data in cases of massive GI bleeding of unknown cause. I found two large autopsy series of cases in which massive GI bleeding had been studied from a clinical standpoint.[4-7] No cause was found in 3.7 per cent of one series and in 7 per cent of the other series. In 10 series, diagnoses had been sought through technics such as history-taking and physical examination, endoscopy procedures, x-ray procedures, and in some cases exploratory operations. In those series the percentages of cases with undetermined cause for the bleeding ranged from 2 to 22 per cent; and the average was 10 per cent.[4-7] Generally, those studies were based on retrospective data. Papers that emphasized accuracy of initial diagnostic impression and radiologic procedure show higher percentages of undiagnosed cases—in the range of 20-25 per cent.

What is the mortality for these cases of gastrointestinal bleeding in which no cause can be found? One might assume that the mortality is pretty high, but the data I could glean from these articles generally did not bear this out. One series[6] that seemed fairly representative included 685 cases of upper-gastrointestinal hemorrhage, and in 60 of these no cause was found for the bleeding. Of the 60 cases, only six proved fatal. These authors compared the mortality in these cases of unexplained bleeding with the mortality in patients with bleeding peptic ulcer, corrected them for age, and found that the mortality was about the same for cases of unexplained bleeding as for cases of bleeding from peptic ulcer.

I might mention two other sets of statistics comparing autopsy studies with clinical studies. Duodenal ulcer is a much more common cause of bleeding in clinical series, but gastric ulcer is a more common cause of fatal bleeding in autopsy series. Varices, of course, have a much higher incidence in the autopsy series.

Dr. Henry E. Hamilton, Internal Medicine: On the basis of postmortem examination, could you detect whether any active fibrinolysin was present?

Dr. Kent: Perhaps Dr. Hoak can answer that question.

Dr. Ziffren: Everyone seems to be waiting for you, Dr. Hoak, but before you come to the platform, I want to add a few questions to those that have already been asked of you. First, I'd like you to tell us whether Premarin is any good. Second, in a patient like this, would epsilon aminocaproic acid be of any value. Third, is calcium of any value. Finally, be sure to tell us, please, how effective are these tests you perform on a patient like this one.

Dr. J. C. Hoak, Internal Medicine: There are some things I should like to know before I start. I understand that this man received a total of seven transfusions. Were any of them fresh blood? I assume that clotting studies were not done, and that a platelet count was not done. Am I correct?

Dr. Ziffren: Clotting studies were not done, and none of the transfusions was of fresh blood.

Dr. Hoak: Was it clotted blood that was found on the bed when he was in a terminal state, or at autopsy?

Dr. Ziffren: It says here: "a pool of dark-red blood. . . ."

Dr. Hoak: Dr. Kent, did you see any evidence of thrombi within the smaller vessels?

Dr. Kent: Yes, I thought there were some in the esophageal section.

Dr. Hoak: This is a very interesting problem, and I should like first to direct your attention to the normal hemostatic mechanism and some of the parts which are involved. We shouldn't think of clotting factors or platelets as specific items, but rather should think of the hemostatic system as a whole. For example, what was the integrity of the vessel wall? We know that patients with Osler's disease or familial hemorrhagic telangiectasia may bleed to death despite normal clotting mechanisms and normal platelet counts. The structure of the capillary wall is defective in such patients, the vessels cannot constrict normally, and bleeding continues.

We want to know whether platelets are adequate both in number and in function, and whether they are able to plug defects. We seek to find out whether there is a deficiency in clotting factors, such as there is in a patient with hemophilia or some other congenital bleeding disorder. I should assume that such probably was not the case in this particular patient. The absence of a history of excessive bleeding in a man of his age and a negative family history suggest that a congenital bleeding disorder such as hemophilia is unlikely.

Another factor involved in the integrity of the normal hemostatic system is clot stability. When a fibrin clot is formed, it becomes stabilized by the action of the fibrin stabilizing factor normally present in plasma. If that factor is absent, as it is in some individuals with a congenital deficiency, bleeding and poor wound-healing tend to occur. One can test for this deficiency by observing whether the blood clot from such a patient dissolves in a 5-molar urea solution. A clot formed from normal blood does not dissolve.

Another factor, the one to which Dr. Hamilton referred, is the fibrinolytic system. This is a normal homeostatic mechanism that is activated under certain conditions, and maintains the fluidity of the blood.

Another factor to be considered in this case is the role of transfused blood in causing the patient to bleed. Seven units of stored blood is just about the amount required to produce thrombocytopenia in a patient, when the transfusions are given within a short period of time. Stored blood is deficient in platelets and in coagulation factors V and VIII, which are labile and disappear with storage. The thrombocytopenia which is seen with massive transfusions is an interesting problem. There has been speculation that immune mechanisms are involved, but the work of Jackson, Krevins and Connolly suggests that the thrombocytopenia results from replacement of the recipient's blood by blood containing non-viable platelets. In their experimental studies, when a dog's blood was stored and then transfused back to him several days later, thrombocytopenia resulted.

Other items which might concern us in this patient are the possibility of a transfusion reaction or latent scurvy. I think both are unlikely, but they should be kept in mind for similar situations in the future.

Dr. Ziffren asked, "What role does calcium deficiency play here?" Citrated blood is listed as a possible cause of calcium deficiency, but I think you can rule it out as a cause of bleeding. When one transfuses enough blood containing citrate to cause a calcium deficiency, he finds that symptoms of tetany, and cardiovascular effects including arrhythmias, occur before bleeding results. So I think we can eliminate hypocalcemia as a cause of bleeding.

There has been some recent information on this subject in LANCET.[8] Patients like the one being discussed here had postoperative bleeding and were found to have short blood-clotting times. The author suggested that they had intravascular clotting, with subsequent sloughing of the infarcted areas and bleeding. They were treated with heparin, and the bleeding stopped. Here we have an apparent paradox in that a bleeding patient is treated with an anticoagulant and improves.

Another interesting point I'd like to emphasize concerns the mechanism for the production of thrombosis in such a patient. Ravin and Fine[9] have shown that bacterial endotoxin may enter the systemic circulation and may not be removed adequately by a reticuloendothelial system depressed as a result of shock. Perhaps in this patient endotoxin was released into the circulation and produced intravascular clotting, subsequent fibrinolysis and a hemorrhagic state. We have evidence that he had pulmonary hemorrhage, and perhaps there was a secondary fibrinolytic syndrome associated with his demise. I think these items fall into the realm of speculation, but are worth considering as possible factors in the production of the fatal bleeding episode.

Premarin and other non-specific hemostatic agents, I think, should be used only as a last resort. To use them in preference to making a careful evaluation of the patient may lead to erroneous conclusions and ineffective treatment.

It would have been interesting and perhaps helpful to have had clotting studies in this case. I should point out, however, that we have seen patients with similar bleeding in whom clotting was found to be normal. Thus one must remember that patients may have bleeding severe enough to be fatal, despite normal clotting studies.

Epsilon aminocaproic acid, a drug which inhibits activation of the normal fibrinolytic system, is helpful in some circumstances. It is particularly useful when one is dealing with a fibrinolytic state secondary to carcinoma of the prostate, or in women who have had placenta abruptio or another obstetrical catastrophe asso-

ciated with increased fibrinolysis. One should be careful, however, for if this situation is secondary to intravascular clotting, merely correcting the fibrinolytic defect may actually predispose to further thrombosis. Perhaps the treatment under such circumstances should be a combination of heparin and epsilon aminocaproic acid.

Dr. Ziffren: Do you expect these tests of yours to be of much help if the patient has received several transfusions?

Dr. Hoak: If the patient's blood has been almost completely replaced by bank blood, there is little point in doing clotting studies. We know what clotting deficiencies exist in stored blood. As a rule of thumb, one should think about using fresh blood for further transfusions after a patient has received five or six units of stored blood.

Dr. Ziffren: If a patient comes in with massive bleeding, should we just draw some blood before we give him any transfusions, or are there any specific instructions we should carry out before giving him a transfusion?

Dr. Hoak: Well, I think you must appraise each case individually. I don't believe we should make hard and fast rules regarding which patients should have coagulation studies on admission. The decision is a clinical one. Clotting studies performed on patients before they are transfused are of greater value in the detection of coagulation disorders. This is particularly true of patients with congenital hemorrhagic disorders.

Dr. Ziffren: But, you see, these patients come to us in the middle of the night, and often we don't know what to do in order to obtain these studies. Yet we must give blood to keep them from dying. Is there any special way in which we should collect blood for tests before we administer transfusions?

Dr. Hoak: Yes. We would be most interested in plasma. We would also be interested in serum, so if we can't draw blood for you in our own special way, the next best thing would be for you to provide us some adequate specimens of both plasma and serum.

Dr. Ziffren: Are there special containers you want us to use?

Dr. Hoak: We can provide you with them.

Dr. Ziffren: Don't you think they should be readily available on the various services—on medicine and surgery, and in the emergency wing of the hospital—so that we can meet this situation?

Dr. Hoak: Yes.

ANATOMIC DIAGNOSES

Massive gastrointestinal hemorrhage, cause undetermined

a. status post-hemicolectomy and gastrostomy
b. inflammation, hemorrhage and congestion of intestine, secondary to "a"

Pulmonary hemorrhage, bilateral, severe, recent

Atherosclerosis and arteriolarsclerosis, including arteriolar nephrosclerosis

Cardiac hypertrophy (500 Gm.)

Dilatation, common bile duct

Status post-cholecystectomy, remote

STUDENTS' DIAGNOSIS

Peptic ulcer in hiatal hernia, with massive hemorrhage.

DR. BUCKWALTER'S DIAGNOSIS

Massive gastrointestinal-tract hemorrhage; no source of bleeding will be found.

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Conference on Medical Aspects of Sports

The Sixth National Conference on the Medical Aspects of Sports will be held on Sunday, November 29, at the Deauville Hotel, Miami Beach, in conjunction with the AMA Clinical Convention. Many well known sports figures will speak at the day-long conference sponsored by the AMA Committee on the Medical Aspects of Sports.

C. B. (Bud) Wilkinson, former football coach and athletic director at the University of Oklahoma, and consultant to the President's Council on Physical Fitness, will be the principal evening speaker. His subject will be "Building Values Through Athletics."

James E. Counsilman, Ph.D., Bloomington, Indiana, U. S. Olympic swimming coach, will give his "Reflections on the 1964 Olympics" at a luncheon session.

Tenley Albright, M.D., former Olympic skating star, will participate in a discussion of "Sports for Girls."

Other speakers will include Warren R. Guild, M.D., Boston, who will speak on "The Meaning of Endurance," and Robert A. Moore, M.D., Ypsilanti, Michigan, whose topic is "Mental Health Through Sports."

Also on the program will be a symposium on "The Shoulder in Sports" and discussion sections on "Sports for the Teen-ager," "Environmental Considerations" and "Aquatic Sports."

Coming Meetings

IN STATE

Nov. 4-5 — **Nursing Institute on Prenatal and Perinatal Problems,** State University College of Medicine, Iowa City.

Nov. 6-7 — **Urology,** State University of Iowa College of Medicine, Iowa City.

Nov. 12 — **Diet Therapy,** State University of Iowa College of Medicine, Iowa City.

Nov. 12 — **Lilly Seminar, presented by Iowa Chapter of AAGP,** Golf and Country Club, Dubuque, Iowa.

Nov. 21 — **Pulmonary Diseases, Mercy Medical Day,** Mercy Hall and Hotel Fort Des Moines, Des Moines.

Dec. 2 — **Postgraduate Course, Tumors of the Nervous System,** Iowa Methodist Hospital Auditorium, Des Moines.

Dec. 4-5 — **Industrial Health Conference,** SUI College of Medicine, Iowa City.

Dec. 11 — **Cardiac & Respiratory Disease Conference,** SUI College of Medicine, Iowa City.

CONTINENTAL U. S.

Nov. 4 — **American College of Physicians Regional Meeting for New Jersey Internists,** Institute for Microbiology, University Heights Campus, Rutgers Univ., New Brunswick, N. J.

Nov. 4-5 — **A. Morris Ginsberg Memorial Seminar: Hematology,** Menorah Medical Center, Kansas City, Missouri.

Nov. 7-8 — **National Conference on Disaster Medical Care,** La Salle Hotel, Chicago.

Nov. 9-11 — **Three Days of Cardiology (Hahnemann Medical College and Hospital),** Marriott Motor Hotel, Philadelphia.

Nov. 9-12 — **Internal Medicine,** University of Kansas School of Medicine, Kansas City, Kansas.

Nov. 9-12 — **Interstate Postgraduate Medical Association of North America,** Pittsburgh Hilton Hotel, Pittsburgh.

Nov. 9-13 — **Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs,** International Inn, Washington, D. C.

Nov. 9-21 — **Course in Laryngology and Bronchoesophagology,** Illinois Eye and Ear Infirmary, Chicago.

Nov. 11-12 — **Medical and Surgical Aspects of Trauma,** Coffey Memorial Auditorium, Milwaukee.

Nov. 11-14 — **American Academy of Neurological Surgery,** Key Biscayne Hotel, Miami.

Nov. 14 — **Wisconsin Society of Pathologists,** Marquette University School of Medicine, Milwaukee.

Nov. 14 — **American College of Physicians Regional Meeting for Montana-Wyoming Internists,** Marillac Hall, St. Vincent's Hospital, Billings, Mont.

Nov. 16-19 — **Section on Otolaryngology of the Southern Medical Association,** Memphis.

Nov. 16-20 — **Fundamental Concepts of Gastroenterology,** University of Michigan Medical Center, Ann Arbor.

Nov. 16-20 — **Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs,** Barbizon Plaza Hotel, New York City.

Nov. 18-21 — **Congress of Neurological Surgeons (14th),** Bal Harbour, Florida.

Nov. 19-20 — **Congenital Malformations,** University of Nebraska College of Medicine, Omaha.

Nov. 20-21 — **American Psychiatric Association,** Bellevue-Stratford Hotel, Philadelphia.

Nov. 20-21 — **M.D. Day,** University of Missouri Medical Center, Columbia.

Nov. 28-29 — **American College of Chest Physicians (interim meeting),** Fontainebleau Hotel, Miami Beach.

Nov. 28-29 — **First National Conference on Areawide Health Facilities Planning,** Americana Hotel, Bal Harbour, Florida.

Nov. 29 — **National Conference on Medical Aspects of Sports,** Miami Beach.

Nov. 29-Dec. 2 — **American Medical Association (clinical meeting),** Auditorium and Exposition Hall, Miami Beach and Americana Hotel, Bal Harbour.

Nov. 29-Dec. 4 — **Radiological Society of North America,** Palmer House, Chicago.

Dec. 5-10 — **American Academy of Dermatology,** Annual Meeting, Palmer House, Chicago.

Dec. 7-8 — **Basic Review of Biochemistry for Practicing Physicians,** University of Nebraska College of Medicine, Omaha.

Dec. 11-12 — **Conference on Blood and Blood Banking,** Drake Hotel, Chicago.

Dec. 14-16 — **The Stomach (Including Related Areas in Esophagus and Duodenum) (Hahnemann Medical College and Hospital),** Sheraton Hotel, Philadelphia.

Dec. 18-19 — **New Horizons in Lymphoma and Leukemia,** University of Nebraska College of Medicine, Omaha.



THANKSGIVING, 1964

Colorful and lovely fall is here, and Thanksgiving Day is imminent. The day was set aside by the Pilgrims in gratitude to God for the bounty of their harvest and for their spiritual as well as physical blessings. It continues to be a national holiday, although in practice much of its spiritual significance has been lost. It is a fitting time for thoughtful people to take inventory, and most of them will find that their cup runneth over.

In this land of plenty and in this country where "freedom rings," many people are prone to criticize their nation and to lose sight of the special privileges all of us enjoy by virtue of citizenship in this blessed country. The national election is over, and the electorate has chosen. The majority are pleased with the outcome, and the minority are unhappy about the defeat of their candidates. Despite all of the oratory, the charges and countercharges and the bitter words, we must and indeed we want to continue living together, and we must forget our past differences. It is a time to unite with patriotic zeal in solving the problems that confront our nation in these troubled and challenging times.

At this Thanksgiving time, it is well for us to reflect not only upon the benison of citizenship but also upon our great responsibilities as citizens. If the blessings we enjoy are to be preserved for our children and for our grandchildren, if a nation in which individual enterprise and individual responsibility are to be safeguarded, if a socialistic or welfare taint on our democratic form of government is to be prevented, the individual citizen can no longer hide his head in the sand or keep his light under a bushel. This is true whether one is a Democrat or a Republican.

It is a time for Thanksgiving and for declaring our determination to fight to preserve those principles which have made America great.

THE PHYSICIAN IS A PART OF THE THERAPEUTIC REGIMEN

A guest editorial in the June issue of NORTHWEST MEDICINE points out the effectiveness of frequent patient-doctor visits in the management of chronic disease. A classic example is that of the obese patient who will not lose weight if given a reducing diet and an anorexic drug, unless his physician continues to see him frequently. Though no one knows the precise psychological mechanism by which it works, the doctor-patient relationship helps both to start and to sustain the patient's progress, no matter which drugs are employed. The patient just does better if he is seen frequently by his doctor.

The author cites an experience with a patient who had an ulcer diathesis, and who had run the gamut of medical therapy, partial gastrectomy, marginal ulcer, gastroscopy, Wangensteen freezing and a return of severe symptoms, and in whom further surgery was contemplated. At that juncture, he was advised to confer with his physician at weekly intervals but otherwise not to change his diet or his medication. The physician-patient visits consisted of brief conversations and a review of the treatment program. The patient rapidly became symptom-free, and continued so for the longest interval since the onset of his disease. When the doctor asked him about the cause of his improvement, the patient said, "Now that I'm seeing you regularly, I'm careful to take my milk between meals."

The chronically-ill patient needs someone in whom he can confide—to whom he can tell his story and to whom he can unburden his soul. The benefits that accrue are perhaps the result of catharsis. Doctors possess no magic wands, and they cannot perform miracles, but they can convince patients of their interest and concern, and can let them know that they aren't walking a long road alone.

POSTGRADUATE STUDY IS IMPERATIVE

"Retooling the Mind" is the title of an article by Neil W. Chamberlain, a Yale professor, in the September issue of THE ATLANTIC MONTHLY. In this provocative paper, he emphasizes the need for continuing postgraduate education for those in the professions, for white-collar workers and for skilled artisans, alike. Speeding up the accumulation of knowledge brings about a quick obsolescence of information. This has resulted in part from better organization and better equipment at research centers.

Professor Chamberlain points out that developments in engineering and the physical sciences have occurred at such a pace that a large part of the knowledge that an engineer acquired in college has become incomplete or has been displaced completely by new subject-matter areas of theoretical and practical importance. It is estimated that half of what a graduate engineer learned is obsolete within 10 years, and a corollary of this assertion is that half of what the engineer will need to know 10 years from now hasn't yet been discovered.

The teacher finds that the body of knowledge

he has to teach has increased so greatly that it isn't long before his competence in his particular field is in doubt. Even in industry, executive positions are being given to young men because of their greater familiarity with new knowledge and new technics. A similar trend is seen in the skilled manual trades, in which the young man who has just completed his apprenticeship is better qualified to meet the demands of new and rapidly developing technologies. With the passage of time, his competence to deal with new problems and new technics will steadily diminish.

Postgraduate training is not new to physicians, and it is generally recognized that the doctor who doesn't keep abreast of current medical literature and who doesn't keep informed concerning the advances of medical knowledge is a scientific hasbeen. Though experience increases judgment, improves skills and enhances the art of medicine, doctors are dependent upon medical centers for the knowledge that has resulted from laboratory and clinical research.

The physician's hours of work are long, and it is difficult for him to concentrate upon the study of medical journals at the end of an exacting day. Unfortunately the doctor has no corporation to subsidize his postgraduate study or to underwrite a sabbatical year for him, and during his absence his office overhead continues. Somehow, there is never a propitious time for the doctor to leave his practice, and there are always patients whom he is reluctant to leave. Yet, despite the many things that militate against his continuing to study and to attend clinics, refresher conferences and lengthier courses, not to mention his constant reading of current literature, the conscientious doctor must keep "retooling his mind."

SHOULD WE VACCINATE AGAINST MEASLES?

Now that an effective measles vaccine is available, physicians are confronted by the question "Is such a vaccine necessary, and should it be given to every child?" A recent report by the British Public Health Laboratory Service* provides the doctor with some help in answering this question intelligently.

During the first four months of 1963, with the assistance of local public health officers in 47 large communities in England and Wales, the British Public Health Laboratory Service conducted a postal inquiry into the incidence of complications during an epidemic of measles. During that four-month period, almost 350,000 cases of measles were reported by physicians. Cards of inquiry concerning the incidence of complications in 55,589 of these reported cases were sent to the reporting physicians. The very volume of responses from doctors was surprising, for 53,008 (95 per cent) of the cards were completed and returned to the Epidemiological Research Laboratory.

Analysis of the epidemiologic data revealed that nearly 67 patients per thousand, or about one in every 15 patients with measles had suffered a serious complication, and that 12 of approximately 53,000 patients had died. The author pointed out that in an average epidemic year, more than 500,000 cases of measles will probably be reported in England and Wales. Inasmuch as the number of cases in this study was just over 50,000, one should multiply that figure by 10 to find the probable number of complications in the whole country during an epidemic. This means that a nationwide epidemic there would leave about 35,000 patients with serious complications.

In this study the highest incidences of complications were in infants and in adults, but there was no difference between the sexes. In all, 496 or 14 per cent of the patients with complications were admitted to the hospital, and an additional 114 patients were admitted for social or other reasons, so that a total of one per cent of the patients surveyed were hospitalized.

More than half of the reported complications involved the respiratory tract, and the diagnoses included pneumonia, severe bronchitis, croup and bronchiolitis. A respiratory complication occurred in 38 per 1,000 cases, or one in every 26 patients. Six children died from pneumonia, and one death was attributed to severe bronchitis. In five of these children who succumbed, there was a preexisting physical handicap.

Otitis media was the second most common complication. It occurred at a rate of 25 per 1,000 cases, and neither age nor sex appeared to be a factor in its incidence.

Some type of neurologic disturbance was reported in four per 1,000 of the 53,000 cases of measles. Of these patients with neurologic complications, 61 or approximately one per 1,000 had encephalitis or impaired consciousness. Behavior changes were observed in one per 1,000, and motor disturbances, mostly convulsions, occurred in two of every 1,000 cases. Encephalitis occurred mostly in children over 10 years of age, and convulsions were most common in children from one to four years of age.

The author points out that an epidemic of measles exacts a formidable toll. Though most patients recover completely from the complications, a significant permanent disability may result in an important minority. Those with encephalitis may have serious intellectual and physical damage. Otitis media may lead to even more serious complications, or result in chronic middle-ear disease. Severe pneumonia may cause permanent damage to the respiratory tract. It is agreed that figures

* Miller, D. L.: Frequency of complications of measles. BRITISH M.J., 2:75-78, (July 11) 1964.

Editorials continued...

vary from epidemic to epidemic, and that the epidemic of 1963 was mild and the complications less frequent than usual. Though previous studies had suggested that prophylactic antibiotics were ineffective in measles, a continuation of the present study will attempt to determine whether antibiotics modified the complications that were reported in the study. The author also plans to inquire further into the state of health of the patients in the study prior to the onset of measles, and into the late consequences of the serious complications. It is concluded that the results of this inquiry reflect complication rates under the present conditions of medical practice in England. On the basis of these findings, measles can scarcely be considered a mere inconvenience.

On the other hand, an editorial in the same issue of the BRITISH MEDICAL JOURNAL** questions the wisdom of generalized vaccination against measles in England. It asserts that vaccination would be sought by those of high social status and not by those in less favorable circumstances in whom complications occur more frequently. The editorial also states that vaccinating 10,000 persons in the hope of preventing some 700 complications, nearly all of which are susceptible of treatment, is a rather costly undertaking. Vaccine, moreover, is urgently needed in other parts of the world where measles is more severe and the mortality is high.

The leading article in THE LANCET for August 1† discusses the subject of measles immunization and, referring to the report of the British Laboratory Service, says: "It seems therefor that measles should be prevented not only, as Langmuir has said 'because it is there and can be done,' but also because of the toll it takes in human misery."

In the United States, 431,530 cases of measles were reported and 350 people died from it in 1962. Physicians who have cared for children with measles, both before and after the advent of antibiotics, have a wholesome respect for the disease and do not regard it lightly. The memory of children permanently damaged and permanently handicapped by post-measles encephalitis is a powerful motive impelling them to vaccinate against measles. Medicine is deeply indebted to Dr. Enders, not only for his contribution to the development of poliomyelitis vaccine, but also for the development of a vaccine against measles, another serious and crippling disease of childhood.

Somehow it would appear that if the tax on cigarettes in Great Britain more than pays for the National Health Service, and if the people of the United States can spend over 18½ billion dollars annually for alcoholic beverages and tobacco, the annual cost of immunization against measles is not unreasonable.

THE HAZARDS OF HOSPITALIZATION

A valuable message to physicians is contained in a paper entitled "The Hazards of Hospitalization," by Schimmel.* The purpose of the investigation on which it was based was not to determine the incidence of reactions to specific diagnostic or therapeutic agents or measures, but rather to determine the cumulative risk to the patient who accepts the whole of modern medical care.

Schimmel, with the aid of the house officers at Grace-New Haven Community Hospital, in Connecticut, sought and reported every noxious response to medical care that occurred among the patients in the medical wards there, from August, 1960, through March 31, 1961. These included all medical patients admitted by the Yale University Medical Service, to three wards of 80 beds. This service cares for private patients of the full-time university staff and for service patients attended by the ward interns, residents and staff physicians. Only the adverse reactions to accepted diagnostic and therapeutic measures instituted in the hospital were included. Non-specific psychiatric disorders, postoperative complications, and errors by nurses or physicians were excluded.

During the eight-month period of the study, 1,014 patients were admitted one or more times, for a total of 1,252 admissions. The house staff reported 240 episodes in 198 patients. These figures meant that 20 per cent of the persons at risk suffered one or more adverse reactions to diagnostic or therapeutic measures instituted after their admission to the hospital. Of those 240 episodes, 110 were classified as minor; 82 were considered moderate; and 48 were regarded as severe. Of the 48 severe reactions, 16 terminated fatally. The mean age of the 198 patients was 53 years, and that was also the mean age of the 1,014 patients admitted during the nine-month period.

There were adverse reactions to diagnostic procedures in 29 patients. Ten of these were minor, six were moderate, and 13 were classified as major. In 17 instances the reactions were persistent and necessitated prolongation of the patient's hospital stay. There were four deaths in this group of 29 patients.

Reactions to therapeutic drugs were recorded 119 times in 103 patients. These were classified as minor in 61 cases; moderate in 44; and severe or major in 14. Sixty-six of the episodes were persistent, and death resulted in four cases.

Transfusion reactions occurred 31 times in 24 patients. Of these, 17 were minor; 11 moderate; and three severe. In nine patients the reactions were persistent, but there were no deaths from transfusion reaction.

Therapeutic measures caused reactions in 24

** Measles and measles vaccination. BRITISH M. J., **2**:72-73, (July 11) 1964.

† Immunization against measles. LANCET, **2**:239-240, (Aug. 1) 1964.

* Schimmel, E. H.: Hazards of hospitalization. ANN. INT. MED., **60**:100-110, (Jan.) 1964.

patients—11 minor; 11 moderate; and two severe. Hospitalization was prolonged by the episode in 14 of these patients, and there were two deaths.

There were 33 episodes of hospital-acquired infection in 21 patients. These were classified as minor in two instances; moderate in seven; and major in 14 of the group. Fifteen of the episodes were persistent, and death occurred in six patients.

Classified under miscellaneous hospital hazards were 14 episodes in 13 patients. Nine were minor; three were moderate; and two were of major significance. In four instances the episode was persistent, and discharge from the hospital had to be delayed. No fatalities occurred in this group of patients.

For the 1,014 patients, the average total hospitalization time per person was 14 days. For the 816 patients who had no adverse episodes, the average length of hospitalization was 11 days. The average for the 198 patients who had untoward episodes was 28.7 days. The data indicated that the risk of an adverse episode was related to the duration of the hospital stay. The prolongation of hospitalization as a consequence of an adverse reaction was difficult to assess, but in most instances it added only a day or two.

The author points out that the number and variety of adverse reactions reported in this study emphasize the magnitude and the scope of the hazards to which the hospital patient is exposed. It is only from a knowledge of the hazards, as well as of the contemplated benefits, of diagnostic and therapeutic measures that judicious selection can be made.

ERYTHROMYCIN IN OFFICE PRACTICE

Erythromycin is an antibiotic with a record of unusual safety. Allergic reactions to it have been infrequent, and the side effects that have been reported have been minor. Because of its apparently low toxicity and its bactericidal action, it appears that it should prove an effective drug in the treatment of certain types of bacterial infection. A recent report by May, a pediatrician in Portland, Oregon, relates the results of a study that he undertook in an effort to determine the efficacy of erythromycin in the treatment of infections he encountered in his office practice.*

May reports upon the use of the drug in 205 patients in whom a diagnosis of acute infection had been made. A total of 257 diagnoses of infection were made in the 205 patients. All of the patients were in the pediatric age group, 180 being under 10 years of age. Every patient selected for study had fever and malaise. The clinical diagnosis was acute tonsillitis in 105 of the children, acute pharyngitis in 77, otitis media in 26, lymphadenitis in 16, bronchitis in eight, suppurative otitis media in six, scarlet fever in six, and miscellaneous other infections in 13 other children. One culture was taken from each of the patients. One hundred ninety-five were from the throat; five from the skin; four from the ear; and one from the nasopharynx. *In vitro* sensitivity studies of a variety of antibacterial agents were done by the sensitivity-disc method. Total white blood cell and differential counts were done on all patients before the initiation of treatment.

In evaluating the effectiveness of the drug, he established some arbitrary standards. Patients in whom defervescence and subsidence of symptoms had occurred in 48 to 72 hours were classed as cured. Those in whom complete recovery did not occur until after 72 hours had elapsed were recorded as improved. Patients with signs and symptoms of the infection persisting after 72 hours were considered unimproved.

Erythromycin therapy was started at the time the clinical diagnosis was made and before the results of culture and sensitivity were known. An initial single intramuscular injection of erythromycin was given to 60 patients, and was followed by oral administration of the drug. In 145 patients the drug was given only by mouth. The recommended dose of the drug for children is 14 mg./lb./day, with a maximum of 23 mg./lb./day. The mean daily dose of erythromycin administered to patients under 70 lbs. in weight was 14.35 mg./lb./day. The duration of treatment varied from three to 15 days, depending upon the type and severity of the infection. The mean duration of therapy was 7.1 days. The drug was continued for a minimum of 10 days in all infections caused by the beta hemolytic streptococcus.

In his report of the results of treatment, the author said that 195 patients made complete recoveries; 32 were improved; and five were unimproved. In the unimproved group there were one case of tonsillitis; two cases of pharyngitis; one case of bronchitis; and one case of suppurative otitis media. Cultures in 58 patients were positive for beta hemolytic streptococci, and 53 of these children made complete recoveries and five were improved as a result of therapy. In 17 instances hemolytic staphylococcus aureus was found on culture. Treatment with the antibiotic resulted in complete recovery in three; improvement in two; and no improvement in two.

In a patient with an acute throat infection who has fever and malaise, and in whom the white blood cell count is over 15,000 and the differential count contains over 75 per cent polymorphonuclear leukocytes, it is reasonable to assume that the infection is bacterial rather than viral in origin. If the throat culture in such a patient yields a growth of beta hemolytic streptococci or coagulase-positive hemolytic staphylococci, it is justifiable to assume that these organisms have caused the infection. In Dr. May's study there was a close correlation between the clinical response and the *in vitro* sensitivity of the organism to erythromycin.

Side effects from the use of the drug were infre-

* May, J. A.: Effectiveness of erythromycin in treatment of office patients. NORTHWEST MED., 63:376-379, (June) 1964.

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quent, and in no instance was it necessary to discontinue treatment. There were eight patients who developed mild diarrhea; one had abdominal pain that was ascribed to the medication; and a skin eruption occurred in five children.

From his study, the author concluded that erythromycin is a safe and effective drug in the treatment of many types of infection seen in office practice, and that it is extremely effective in infections due to beta hemolytic streptococci and hemolytic staphylococcus aureus. The study also demonstrated that by a careful initial evaluation, a thorough follow-up of patients and the help of a reliable laboratory, it is possible to evaluate the effectiveness of antibacterial agents in an office practice.

A very similar study of the use of erythromycin in office practice has recently been reported by Bleicher and Koszewski, of Omaha.** However, the patients were not confined to the pediatric age group. In 191 patients who were ill with the usual types of infection seen in office practice, and to whom erythromycin was administered, clinical cures resulted in 181 cases (95 per cent); eight patients were improved; and in only one patient was the treatment regarded as a failure. Side effects were rare, and it was not necessary to stop therapy in any of the group.

In the experience of the Omaha physicians, erythromycin was effective and well tolerated by the patients. Most of them suffered from upper-respiratory infections. An unusual finding was that staphylococci were the most common organisms that grew out on culture, outnumbering streptococci two to one, and exceeding pneumococci almost six times. Another interesting finding was that those patients in whom the culture grew out erythromycin-resistant organisms, as tested by the *in vitro* studies, responded to therapy as promptly and as well as those in whom the organisms had been found to be erythromycin-sensitive. Thus, some doubt was raised concerning the reliability of the disc-sensitivity method in determining appropriate antibiotic therapy, even though there was a lower incidence of resistance to erythromycin than to the other antibiotics tested in this study.

The treatment of acute infections in office practice poses some difficult problems. Routine cultures and sensitivity tests are not always possible. They add to the expense for the patient, and the growth of a specific organism on culture is no guarantee that it is the etiologic agent. A brisk leukocytosis and a left shift in the differential white count supports a diagnosis of bacterial infection. However, this adds to the cost for the patient, and it is not always possible to perform these tests on every patient with an infection who enters a busy office.

In actual practice, the average physician who suspects streptococcal or staphylococcal infection probably administers long-acting penicillin, and repeats the injection after five days. In those patients in whom hypersensitivity to penicillin is known or suspected, a broad-spectrum antibiotic such as erythromycin which is effective and well tolerated is a welcome addition to the physician's armamentarium.

Confronted by a patient with an acute pharyngitis or an acute tonsillitis, the doctor is in a dilemma. He must give appropriate antibacterial therapy over a sufficient period of time to those patients with infections due to certain organisms. He must avoid the promiscuous administration of potent drugs when they are not indicated. He must resist the pressure of patients who demand a miracle drug for every cold or indisposition. One office with which the writer is familiar solves the problem by taking routine cultures of patients with acute throat infections. The throat swab is streaked on blood agar plates containing neomycin to eliminate the growth of gram-negative organisms, and the plates are incubated overnight in the physician's own laboratory. Hemolysis surrounding the streaks is an indication for antibiotic therapy in appropriate dosage for a minimum of 10 days. In this manner, the hazard of overlooking the more serious types of infection is avoided.

SGOT AND LDH

More and more sophisticated laboratory procedures are available to the clinician, but if they are to help him, the results must be properly interpreted. Two enzyme determinations of recent origin, serum glutamic oxaloacetic transaminase (SGOT) and serum lactic acid dehydrogenase (LDH) have proved particularly helpful in the diagnosis of acute myocardial infarction and of acute hepatitis. A report of an experience with 595 of these enzyme determinations in 506 hospitalized patients from 1957 to 1962 in a 314-bed hospital at Seattle should be of unusual interest to the practicing physician.*

The authors point out that enzymes are the catalysts in cellular biochemistry, and that organizations of cells contain enzymes highly specific for that particular organ. Necrosis of tissue results in a prompt release of the enzymes into the body fluids. A determination of the kind and amount of enzymes in the blood serum may reveal the organ injured and the severity of the injury, and may assist in the recognition of the disease.

Serum glutamic oxaloacetic acid transaminase and lactic acid dehydrogenase are present in

** Bleicher, J. E., and Koszewski, B. J.: Clinical study of erythromycin stearate and erythromycin ethyl succinate in office practice. NEBRASKA M. J., 49:471-474, (Sept.) 1964.

* Foster, R. F., Nevé, R. A., and Apaydin, K. S.: Clinical experience with serum glutamic oxaloacetic acid transaminase and lactic acid dehydrogenase assays. NORTHWEST MED., 63:371-376, (June) 1964.

human serum and in all tissues, but are in an especially high concentration in the heart and the liver. Actual necrosis of tissue in either of these organs causes a release of the enzymes. Injury or inflammation, short of necrosis, ordinarily does not produce this result.

In the Seattle study, hospital charts were studied to obtain data concerning the final diagnosis, the SGOT and LDH determinations, the day or days of illness on which they were tested, and the electrocardiographic report. Additional data recorded by the investigators included the pertinent history, fever, leukocyte count, sedimentation rate, serum bilirubin, autopsy reports when available, and finally the attending physician's impression of the case.

As a result of the study of the enzyme levels in this group of patients, the authors emphasized that there were three findings of note:

1. *The significant number of elevated test results in patients with myocardial infarction.* Of the 124 cases, the SGOT was elevated in 76 and normal in 48. The large number of normal values was attributed to the fact that the tests were made either too early or too late in the course of the illness. Only 20 LDH tests were made in the 124 cases. Of them, 10 were elevated and 10 were within normal range.

2. *The finding of almost uniformly normal SGOT values in patients with simple myocardial ischemia, in the inflammatory diseases, in malignancies, and and in a wide variety of diseases in which tissue necrosis does not occur.* Of nine patients with pulmonary infarction, the level was elevated in four and normal in five.

3. *A very high percentage of positive tests in patients with liver disease.*

Though other investigators may be unable to substantiate these observations, the Seattle group are under the impression that serum enzyme studies may be of greater value than the electrocardiogram in the diagnosis of acute myocardial infarction. Though the electrocardiogram gives valuable information relating to necrosis, ischemia, arrhythmia, conduction defects and preponderance, it is often confusing because of multiple abnormalities other than acute myocardial infarction.

Enzyme studies were considered of immense value in certain disease states that simulated myocardial infarction clinically, and those conditions had normal serum enzyme levels. If elevated, they were at much lower levels than ordinarily are observed in myocardial infarction. Elevated levels were not found in angina pectoris, pericarditis, valvular heart disease, pleurisy and pneumonia.

The study indicated that the timing of serum testing for both SGOT and LDH is of importance. The serum transaminase level in myocardial infarction rises early, usually reaching a peak in 24 to 48 hours and falling to normal about the sixth day. Ordinarily the LDH reaches a peak about 24 hours after the transaminase, and remains high for a much longer period of time.

Both enzyme tests were found valuable in the diagnosis of liver disease, particularly hepatitis. With one exception, all patients with hepatitis had marked elevations of both enzymes as well as of the serum bilirubin. In both acute hepatitis and obstructive biliary-tract disease, the enzymes appeared to parallel the degree of jaundice. Six of nine patients with hepatic cirrhosis had elevated serum transaminase on the first day of hospitalization. In extra-hepatic biliary obstruction, it was found that the transaminase level was inclined to be lower (usually under 400 units), and the serum alkaline phosphatase was higher than it is in acute hepatitis.

The authors concluded that proper timing and serial determination of serum enzymes are extremely helpful in the diagnosis of myocardial infarction and hepatic disease, and in the differential diagnosis of a number of other conditions. It must be remembered, however, that enzyme studies are but laboratory aids that must be correlated with the clinical picture and other laboratory data.

Booklets for Arthritis Patients

The newly renamed Arthritis Foundation has two new booklets for distribution to arthritis sufferers. "Diet and Arthritis" is designed to guide them toward healthful and well-balanced meals that will aid them in fighting their disease. It stresses that there is no absolute cure for arthritis, nor is there any particular "arthritis diet." After outlining the four basic food groups which go to make up healthful food planning, it discusses problems of arthritis and overweight, and offers practical hints for the patient who needs to lose excess pounds which may be aggravating his condition and causing him unnecessary discomfort. Problems of underweight are also discussed. It then considers the role of diet in relation to particular forms of the rheumatic diseases, including rheumatoid arthritis, osteoarthritis, gout and juvenile rheumatoid arthritis.

"Osteoarthritis, A Handbook for Patients" is a newly revised booklet. Statistics show that more than 80 per cent of people past 50, and 90 per cent of those past 60 years of age have osteoarthritis to some extent. There is no specific cure for osteoarthritis, but only 15 per cent of patients show any disability.

The illustrated booklet is designed to help sufferers understand the nature of osteoarthritis—its origin, symptoms and treatment. The disease is described as a "wearing out" process that begins with the splintering and disintegration of the cartilage which covers the ends of the bones. As the cartilage gives way, underlying bone is exposed to wear and tear, leading to pain on movement.

The new address of the Iowa Chapter of the Arthritis Foundation is 914 Locust Street, Des Moines 50309.

President's Page



Although the first Thanksgiving was celebrated in December, 1621, the Pilgrims spent their first three years in virtual starvation.

Prior to 1623 they farmed in the collectivist manner, with theoretical contribution *from each according to his ability and to each according to his needs.* This proved to be a failure at both ends.

Since there was no foreign-aid to subsidize collectivism in that day, they had to choose between starvation and changing their system. They chose the latter.

In the spring of 1623, land and grain were apportioned, and each of the families was left to plant, till and harvest at its own risk and reward.

The result? ABUNDANCE; even ultimate surpluses, with which they could trade for furs and other supplies.

In approximately 1647, Bradford's HISTORY OF PLYMOUTH PLANTATION relates that even the "women now wente willingly into ye field . . . which before would aledg weakness, and inabilitie; whom to have compelled would have bene thought great tiranie and oppression. . . . Any generall wante or famine hath not been amongst them since to this day."

Happy Thanksgiving!

Otis D Wolfe

President

THE JOURNAL *Book Shelf*



BOOK REVIEWS

GUIDES TO PSYCHIATRIC REHABILITATION: A COOPERATIVE PROGRAM WITH A STATE MENTAL HOSPITAL, ed. by *Bertram J. Black,* Executive Director (New York, Altro Health and Rehabilitation Services, Inc., 1964. $2.50).

Psychiatric rehabilitation has been defined as the modification of behavior and attitudes through a planned program of activities and relationships that will provide opportunities for adaptive behavior. This succinct and challenging 96-page report describes a project designed to demonstrate modern concepts of rehabilitation with hospitalized psychotic patients. In planning and setting up a rehabilitation team to assess the patient's needs and readiness for rehabilitation and to mobilize the resources needed for his successful return to productive economic and social life, the project also demonstrated quite clearly the multiple problems involved in integrating hospital and community services. It was a project that might well be duplicated in other areas of the country, since it identifies quite well the difficulties now present in bridging the gap between the patient's need and the many services which now exist in communities but which are not well used in meeting them. The process of referral is, frequently, like clapping with one hand.

The project, one of the earliest carried on under the Mental Health Project Grants Program of the NIMH, was initiated by a private agency (Altro) and carried on jointly with Rockland State Hospital, in New York, and the New York Office of Vocational Rehabilitation. By uniting a large state mental hospital with a public and a private rehabilitation agency, it focused upon a need to develop a more flexible and realistic use of therapeutic talent, both inside and outside the hospital. Although emphasis in state hospital programs is still, of necessity, primarily on emergency care and treatment, the needs of the psychotic patient clearly go beyond protection and treatment during the acute phase of his illness. The problems of rehabilitation of the mentally ill are closely related to the goals of therapy. Rehabilitation is a continuing process that should start as early as possible and continue as long as the individual needs help.

Many patients do recover so completely that they can resume a normal life with no help. For others, a single source of help—the family, an outpatient clinic or private psychiatrist, a vocational counselor, a case-working agency—may provide whatever is needed. But there are many others who have multiple problems that require a variety of services. There is no mystery about the methods or the concepts of the process of rehabilitation. The work of no single service can be regarded as constituting rehabilitation. Hospitalization, psychiatry, casework, vocational counseling services, employment agencies, sheltered workshops, residential arrangements, financial support are not in themselves rehabilitation. Rehabilitation is *all* of these, not necessarily all working together with the same individual, but all integrated into a program in which any one, some or all can be made available to an individual as needed.

In the rehabilitation of a psychotic, rehabilitation is an ongoing process involving reassessment and new plans as new situations are met and reacted to. Services and personnel do exist in hospitals and communities to provide this kind of help for some patients but they are not used with maximum effectiveness because, usually, the catalyst is lacking to assess the patient's needs and assets adequately and to mobilize the necessary resources inside and outside the hospital to ensure continuing help.

A comprehensive rehabilitation program begins with a thorough assessment of a patient's assets and strengths, as well as of the weaknesses that will require continuing support and supervision. The validity of such an assessment depends upon the breadth of sources of information. In the hospital, these include everyone who knows the patient—physician, psychiatrist, ward attendant, work supervisor, occupational therapist, social worker, vocational counselor. All must share and be willing to contribute information. This kind of communication obviously requires an orientation to and an acceptance of rehabilitation as a process —and one that is initiated early in the treatment program and not at the time of discharge. Criteria for a patient's discharge from hospital do not necessarily coincide with his readiness for this project's rehabilitation services.

However, as the project's report makes abundantly clear, the most accurate assessment of the needs and assets of the patient is a meaningless activity unless there are resources available to carry out plans developed from such an assessment. Perhaps the most illuminating sections of the report are the guides listed, with illustrating case histories, for the assessment and selection of patients.

In the initial planning of this project, it was hoped not only to demonstrate rehabilitation within the hospital but to deal fully with the community aspects of resocialization and re-establishment of the patient after discharge. Quite early in the course of the three years of the project's existence, it became clear that the importance of starting rehabilitation

closer to the onset and treatment of illness that planning stopped at this stage.

The importance of projects such as this one becomes increasingly greater as new treatment methods and emphasis on community-centered care enables larger numbers of patients to remain in their home communities when, in former years, they would have stayed in hospital. Returning to the community after a period of hospital care represents a certain amount of stress for all patients. For some, it is a serious threat to their continued well-being and, if they are unable to make the transition, it means continued and, often needless, hospital care. Returning to a useful role in society, one step at a time, provides the insecure patient with a chance to gain confidence through planned experience and support while he needs protection.—*Herbert C. Merillat,* M.D.

X-RAY TECHNOLOGY, THIRD EDITION, by *Charles A. Jacobi* and *Don J. Paris* (St. Louis, C. V. Mosby Company, 1964. $11.50).

The third edition of this textbook of X-ray Technology attests to its past acceptance and popularity. It offers a concise yet complete coverage of information for the student of x-ray technic. As mentioned in the foreword of this edition, it also provides a limited though adequate guide for the technician in a small department who has very little direct supervision or direction.

The fore part of the book presents basic elements of electricity, physics and circuitry. The remainder is devoted chiefly to positioning and technic. All positioning is very well illustrated through the use of a model and reproduction of the resulting radiograph. Technical factors are concisely presented for each.

In summary, this seems to provide an excellent text for schools of X-ray technology, as well as a very helpful guide for the graduate technician.—*L. L. Maher,* M.D.

ATLAS OF GENERAL SURGERY, SECOND EDITION, by *Joseph R. Wilder,* M.D. (St. Louis, The C. V. Mosby Company, 1964. $23.50).

This volume is a revision of an atlas first published in 1955. It has been brought up to date with new sections on vascular surgery, hand surgery, and pelvic surgery. In addition, the illustrations have been redrawn and the text revised. The atlas contains details and sketches of approximately 100 operative procedures —representing a rather complete list of the procedures commonly done in general surgery.

Exception can be taken to a few of the details: the location of the inferior thyroid vessels; an inference that skin grafting is routinely necessary in radical mastectomy; a failure to mention the use of a sterile proctoscope through a colotomy incision in locating an elusive polyp of the colon.

All atlases of surgery have considerable merit as a ready reference for hasty review. They are most useful to those with considerable operative experience, for sketches seldom reproduce tissues and organs as they actually appear at the operating table, and one cannot learn to operate by looking at a book.

This atlas can be particularly recommended because of the completeness of its table of contents, and because of its "slick paper" quality.—*Daniel F. Crowley,* M.D.

BOOKS RECEIVED

EMERGENCY TREATMENT AND MANAGEMENT, THIRD EDITION, by *Thos. Flint, Jr.,* M.D. (W. B. Saunders Co., Philadelphia, 1964. $8.75).

PROTEINS AND THEIR REACTIONS, by *H. W. Schultz,* Ph.D. and *A. F. Anglemier,* Ph.D. (Westport, Conn., The Avi Publishing Co., Inc., 1964. $3.00).

MILESTONES IN NUTRITION, VOL. 2, by *Samuel A. Goldblith,* S.M., Ph.D. and *Maynard A. Joslyn,* M.S., Ph.D. (Westport, Conn., Avi Publishing Co., Inc., 1964. $14.25).

CORONARY CASE: A PERSONAL REPORT, by *Rex Edwards* (New York, Emerson Books, Inc., 1964, $3.95).

OBSTETRICS & GYNECOLOGY, by *Ralph C. Benson,* M.D. (Los Altos, Lange Medical Publications, 1964. $5.00).

CELLULAR INJURY—CIBA FOUNDATION SYMPOSIUM, by *A. V. S. de Reuck,* M.Sc., D.I.C., A.R.C.S., and *Julie Knight,* B.A. (Boston, Little, Brown and Co., 1964. $12.00).

ANIMAL BEHAVIOUR AND DRUG ACTION—CIBA FOUNDATION SYMPOSIUM, by *A. V. S. de Reuck,* M.Sc., D.I.C., A.R.C.S., and *Julie Knight,* B.A. (Boston, Little, Brown and Co., 1964. $13.00).

STEREOSCOPIC MANUAL OF THE OCULAR FUNDUS IN LOCAL AND SYSTEMIC DISEASE, by *Frederick C. Blodi,* M.D., and *Lee Allen* (St. Louis, C. V. Mosby Co., 1964, $32.50).

PREVENTIVE MEDICINE IN WORLD WAR II, Vol. VII, COMMUNICABLE DISEASES, Lt. General *Leonard D. Heaton,* The Surgeon General, U. S. Army (Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1964, $4 25).

Mercy Hospital Medical Day

"Pulmonary Diseases" is the topic selected for the Mercy Hospital (Des Moines) Medical Day Program, November 21, 1964. The lectures in the afternoon will be presented at the Hospital. As in past years, the evening program at Hotel Fort Des Moines will consist of a social hour and banquet, and an address by Dean Mason Ladd, of the S.U.I. College of Law. Banquet tickets will be $5.00 each.

The medical presentations will be as follows:

1:45 p.m. "Surgical Management of Some Common Lung Lesions"—J. L. Ehrenhaft, M.D., professor of surgery, S.U.I.

2:15 p.m. "Emphysema: Diagnosis and Treatment"—James P. Lillehei, assistant professor of medicine, University of Minnesota

3:00 p.m. "Evaluation of Dyspnea"—Arthur M. Olsen, M.D., head of a section of medicine, Mayo Clinic

3:30 p.m. "Hyperbaric Oxygen and Its Present Role in Medicine"—Jack Van Elk, M.D., physician in charge, Section of Cardiology, Lutheran General Hospital, Chicago

4:00 p.m. PANEL DISCUSSION AND QUESTION AND ANSWER PERIOD—Paul From, M.D., Des Moines internist, moderator



Suggestions to County Medical Societies

At the IMS Fall Conference for County Society Officers and Other Representatives—as your deputy councilors doubtless have since told you—numerous speakers outlined specific activities in which local medical groups and individual physicians should engage. This article will summarize them briefly, in order to remind all member physicians about them.

Otis D. Wolfe, M.D., the IMS president, opened the session on September 13 with a philosophical and inspirational address that brought high praise from the hundred or more doctors and doctors' wives who made up the audience. His complete text is contained in a booklet "Highlights of the 1964 Fall Conference" that your deputy councilor probably can lend you, but if not, you will find an epitome of his address in his President's Page in the October JOURNAL. The keynote address by Walter Judd, M.D., former Congressman from Minnesota, which was similarly philosophical and inspirational, is capably summarized by Mrs. Noble W. Irving, under the title "Man's Great Need: Healing," on page 682 in this issue of the JOURNAL.

COOPERATION WITH OTHER PROFESSIONS

Mr. Robert B. Throckmorton, AMA general counsel, said that the medical profession needs to have a greater voice in the handling of malpractice claims. For that purpose, he urged doctors to make greater use of the medicolegal committees of their county and state medical societies. Insurance carriers, he thinks, are too frequently willing to settle in order to avoid a lawsuit, and their attitude tends to encourage groundless claims.

Mr. Throckmorton reviewed a recent AMA survey of malpractice claims, and said that a complete summary would appear shortly in JAMA. Responses from 288 Iowa doctors showed that 53 had had one or more malpractice claims during their years of practice. Thirty-nine reported one; 12 reported two each; and two reported three. The survey indicated that claims against doctors in Iowa had increased 26 per cent since the last survey, in 1956. Iowa physicians, he said, are above the national average in the number of claims brought against them.

Mr. Throckmorton also encouraged county medical societies to hold frequent joint meetings with their local bar associations. Pointing out that more lawyers become legislators than do the members of any other group, he suggested that lawyers could be familiarized with medicine's point of view on legislative issues at such meetings.

One of the other speakers, Ralph P. Lagoni, M.D., of Eldridge, reviewed the accomplishments of the Scott County Medical-Legal Committee that he heads. Its aims are: (1) To plan and carry out a continuing program of mutual education and cooperation for doctors and lawyers, and (2) To arbitrate grievances brought by physician against lawyer, by lawyer against physician, or by patient against physician, whenever such arbitration is mutually acceptable. The record of his Committee as a board of arbitration, he said, is thus far a perfect one—five cases submitted, and five cases settled without resort to the courts.

R. Paul Ferguson, M.D., of Lake City, urged county medical societies to conduct meetings between physicians and clergymen. In less than a year, he said, 46 county societies in Iowa have established committees on medicine and religion, but too few of those committees have really begun to work.

A state meeting on physician-clergy relations was held last spring, Dr. Ferguson reported, and a workshop for chairmen of county committees is being planned for November.

John G. Thomsen, M.D., of Des Moines, chairman of the IMS Committee on Public Relations, reminded his audience that the IMS has utilized newspapers, radio and television to communicate

with the public regarding health care, and that the time has now come when medical societies at the local level should establish and activate their own speakers' bureaus, so that doctors can address civic, service and church-sponsored groups as often as those organizations may wish.

Dr. Thomsen offered the following suggestions: (1) Appoint a willing local chairman. (2) Encourage the chairman to enlist the services of doctors who are willing to present talks. (3) Distribute a letter to the various community organizations describing the services of your Speakers' Bureau, and invite requests for speakers. (4) Provide liaison service between lay organizations and physician speakers. All county medical society presidents will receive more specific details about the establishment of speakers' bureaus in the near future, Dr. Thomsen said.

LEGISLATION

Arthur P. Long, M.D., the new acting commissioner of health for the State of Iowa, asked the cooperation of physicians as individuals and as members of county and state medical societies. He pointed out that no age group in the state is adequately protected against smallpox and tetanus. He said that greater attention needs to be given to the health problems of the elderly, particularly in the southern tiers of Iowa counties where 20 per cent of the people are in the elderly bracket.

He asked help from doctors in securing: (1) a radiologic inspection and licensing law, and appropriations to enable the Department of Health to enforce it; (2) state money so that the Department can supervise and counsel nursing-home proprietors more adequately; and (3) repeal of restrictions on the levying of taxes at the local level for public health purposes. Dr. Long reported that Iowa ranks forty-ninth among the states in the amount of appropriated funds for public health. He also expressed great interest in a reconstituting of the State Board of Health.

Elmer M. Smith, M.D., director of medical services for the State Board of Social Welfare, reported that the Medical Aid to the Aging (Kerr-Mills) program in Iowa will run out of funds in March or April of next year, even though it began six months after the start of the biennium for which the 1963 General Assembly appropriated funds. Instead of eventually reaching 5,000 participants, the caseload has already reached 6,296, and it is now felt that 10,000 may be a more realistic maximum.

Dr. Smith declared that physicians must help see to it that MAA continues without any decrease in services covered, since the success of Kerr-Mills will provide the best argument against the enactment of King-Anderson (Social-Security based) legislation. One thing that interested physicians can do is to make sure that the claims committees at the county level really work.

Thomas C. Pieckenbrock, M.D., of Dubuque, chairman of the IMS Subcommittee on Mental Health, said there is danger that the orderly progress which has been made in improving care for the mentally ill and the retarded in Iowa may be disrupted. The "Community Health Centers Act of 1963" made federal funds available for the construction of additional facilities, and various well-meaning but ill-advised groups have already applied for this money. The IMS and the Iowa Psychiatric Association believe that no such grants should be made until comprehensive plans for their use can be completed. Dr. Pieckenbrock invited county medical societies to support that point of view.

John H. Kelley, M.D., of Des Moines, chairman of the IMS Committee on Legislation, listed four topics in which the IMS will be principally interested when the 1965 General Assembly convenes: (1) health care under welfare programs (OAA, ADC, AB); (2) MAA appropriations and services; (3) reconstitution of the State Board of Health; (4) free choice of physician under Workmen's Compensation.

With the temporary reapportionment law now in effect, Dr. Kelley noted, a large number and perhaps a majority of state legislators will be serving for the first time. Consequently medicine, like other professional and occupational groups, will have to develop new friendships. The best way to do this is for each physician in the state to get to know the legislators representing his particular district.

Robert C. Brown, M.D., of Mason City, spoke on behalf of the Iowa Physicians' Political League (IPPL), which he heads, and his message can be summarized in two short, emphatic statements: "Good Work! Keep it up!" Participation by doctors and doctors' wives at precinct caucuses and at county and state party conventions was downright remarkable last spring; the work of organizing branches of IPPL in all Congressional districts is progressing satisfactorily; and the enrolling of members to support IPPL educational programs and to support candidates who share medicine's views has gone pretty well this year. "Democracy," Dr. Brown concluded, "is not a spectator sport. It will work only if an informed electorate takes an active part."

IOWA MEDICAL FOUNDATION

A blueprint for the future of the Iowa Medical Foundation was presented by George H. Scanlon, M.D., of Iowa City. (A brochure outlining the organization and its purposes has since been distributed to all Iowa doctors.) The Foundation will: (1) maintain and expand the medical-student loan program; (2) develop regional postgraduate programs for doctors; (3) support research projects, especially in socioeconomic areas; (4) sponsor such projects as high school student science fairs.

Dr. Scanlon encouraged all Iowa doctors to help finance the work of the Iowa Medical Foundation.

Iowa Chapter of the American Academy of General Practice

Highlights of the Annual Meeting

KEITH WILCOX, M.D.

There is nothing too wrong with medicine, as our very successful meeting last month clearly demonstrated. First off, great credit must be given to the Education & Scientific Assembly Committee, consisting of Drs. C. H. "Cal" Stark, Wm. "Bill" Castles, A. J. Havlik, Clyde J. Smith, Wm. D. Perrin, Keith Woodhouse, John Camp, Richard Hammer, Roger Boulden and Harold Moessner. Their year's work really paid off!

Among the highlights was the high caliber of the individual speakers for the shortened two-day meeting. Offering chances at winning television sets helped get members to stay for the last minute of each day's session. For the second year in a row, we had a very delightful evening of entertainment supreme, following a buffet dinner, libations, nutritious low-calorie food (?), and an amazingly talented comic in Jerry VanDyke. The dance was like the "old days," with as personable an orchestra as they have in the big cities or Las Vegas. And all for six bucks!

The two newspapers in Des Moines, the morning REGISTER and the evening TRIBUNE, were very cooperative and helped to preserve our image, as witness the titles: "Doctor Tells Who Are the Potential Suicides," "Ties Hostile Feeling to Long Grief," and "The Quints' Doctor Is Here to Talk."

One hundred ninety-nine members were present, and with the speakers and VIP's, the total attendance came to 223. Thus the tendency of the past two years was reversed. In 1963, only 175 doctors attended. Some of the so-called luck elements turned out well for us, in that the weather was ideal, AMA President Ward and his wife were part of the festivities, the Aberdeen quints were just one year old, and no really competitive meetings were going on at the same time.

Then I should mention some of the little things that turned out to be big things: the neat little calendar booklet that was sent out a month previous to the meeting; the useful blue secretary holder that was given to each member; the announcement that wives would be welcome anytime, with the consequence that more women were in the audience than at previous meetings; and the fact that all the exhibitors were pleased with the meeting.

All in all, everything about the sessions was gratifying, and was an encouragement for future annual meetings.

Lilly Seminar at Dubuque

In cooperation with the Dubuque County Medical Society, the Iowa Chapter of the AAGP will present a Lilly Seminar at the Dubuque Golf and Country Club on Thursday, November 12.

The program will begin at 1:00 p.m., there will be a dinner at 6:00 p.m., and one speaker will follow the dinner.

"Malabsorption Syndromes in Childhood"—John C. Dower, M.D., Department of Pediatrics, Mayo Clinic

"Calcification in the Renal Parenchyma"—David A. Culp, M.D., professor of urology, S.U.I. College of Medicine

"Management of Fractures of the Tibial Shaft"—Anthony J. Bianco, Jr., M.D., Department of Orthopaedics, Mayo Clinic

"Management of Bladder-Neck Obstruction"—Dr. Culp

"Surgery on the Arthritic Patient"—Dr. Bianco

"Discipline Problems in Children"—Dr. Dower

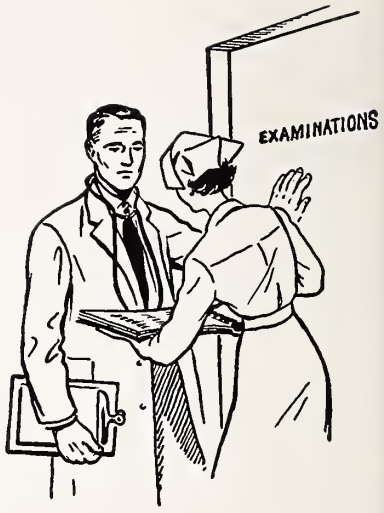
Attend the

AMA Clinical Convention

Miami Beach, Florida

November 29-December 2

THE DOCTOR'S BUSINESS



Should You Lease Equipment?

HOWARD D. BAKER
Waterloo

As is the case with many questions of an economic nature, there is no standard "yes" or "no" answer to the question of whether one should lease rather than own equipment. Each such question must be analyzed in terms of the specific terms and conditions.

Leasing of equipment has developed over the past few years, primarily out of a need for working capital by businesses and industries that require abnormally large financial outlays for plant and equipment. Frequently, these concerns can use their limited capital to better advantage in other phases of their business than by committing it semi-permanently to equipment.

In general, however, leasing companies are organized for profit. Certain volume-purchase economies may be available to them in some instances, but it must be remembered that the lease payments which they receive must cover not only the cost of the equipment to them, but also their financing and administrative costs, plus anywhere from a reasonable to an excessive profit on the transaction.

Many leasing companies talk about "tax savings" in their attempts to attract customers. These are more imaginary than real, since the entire cost of purchased equipment can be recovered through regular or accelerated depreciation, which is no less tax-exempt than are payments for equipment rental. If greater tax-deductions result from leasing, they usually result from the simple fact that the cost is greater.

One may be interested principally in achieving the greatest possible tax deductions. If so, he can purchase his equipment, claim 20 per cent first-year depreciation, 7 per cent investment credit, and so on, thus recovering as much as 75 per cent of the cost within the first five years of ownership. Frequently, however, such a procedure is short-sighted. In new practices or new partnerships with generally rising incomes, it is advantageous to spread the deductions for recovery of the cost of an asset over the longest possible span. In such a situation, neither leasing nor accelerated depreciation of outright purchase is desirable.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

EXAMPLE

In evaluating the specific merits of a leasing proposal, there are two primary considerations that must be scrutinized very carefully. First, what is the total cost of the asset to be (A) if I lease, and (B) if I buy the asset? Second, what will be the tax status of the payments I make?

A lease agreement that we evaluated recently illustrates both of these factors clearly. The lease of a new $5,000 x-ray was to be for five years, and provided for rental payments of $110 monthly. At the end of the rental period, the doctor could exercise an option to purchase the five-year-old machine for $300.

Over the five-year lease period, the doctor would pay $6,600 in rental payments and then would make a final option payment of $300, for a total of $6,900. A cash purchase would require $5,000, or $1,900 less. Even assuming a five-year credit purchase at 6 per cent, the total principal and interest payments would figure out to $96.67 per month, or a total of $5,800. In other words, the doctor would be paying a premium of $1,900 to lease the machine if he had adequate funds available for cash purchase, or a premium of $1,100 if he had to finance 100 per cent of the purchase over the same five years. Reduced to monthly terms, it would be $13 per month cheaper for him to buy than tc lease.

Evaluation of the tax status of this particular contract was even more disappointing. The Internal Revenue Service screens these leases very carefully, and requires that they have more aspects of a lease than of a purchase agreement. A very important factor in this screening is the option

price. If it is representative of the fair market value at the option date, the arrangement will probably stand up as a lease. However, investigation of this particular contract disclosed that the value of a five-year-old x-ray machine of this type could be estimated at $2,400 to $3,000. Comparing that value with the $300 option price indicated clearly that the option price was nominal.

In this instance, after agreeing to pay an unreasonable rental, the doctor would be faced with the probability of having the Revenue Service classify his transaction as a conditional sales contract and therefore require him to amortize the cost over a 10-year life.

If the doctor were to borrow $5,000 and to buy the machine outright, he could take the 20 per cent first-year depreciation, or $1,000, plus $800 for 10-year accelerated depreciation. In the second, third, fourth and fifth years he could take an additional $1,890 of depreciation annually, for a total of $3,690. He could also take a tax deduction for the $800 of interest that he paid on his loan over the five-year period. Finally, he would be entitled to $350 of investment tax credit—equal to a $700 deduction in his 50-per-cent tax bracket. His total deductions would thus equal $5,190 of the $5,800 cash outlay over the first five years, or 89½ per cent.

On the lease, he would pay out $6,900, thus entitling himself to $5,090 depreciation. The $483 of investment tax credit would be equal to a $966 depreciation deduction, and thus his total deductions for the five-year period would be $6,056, or 87½ per cent of the total outlay.

Obviously this doctor wasn't anxious to pay a premium of $1,100 for the machine and then to deduct 2 per cent less of that cost over the first five years.

Although this wasn't a standard lease, it was quite typical of equipment leases from an economic standpoint. It can be stated generally that it takes a special set of financial circumstances to justify leasing rather than purchasing equipment for a medical or dental practice.

Only through careful evaluation of your specific circumstances, and examination of the proposed lease can the desirability of a leasing proposal be determined. Obviously, the time for that evaluation is prior to the execution of the lease agreement.

AUTOMOBILE LEASING

The question of auto leasing has been dealt with in previous articles. In general, it has been concluded that unless one drives at least 25,000 miles per year, or unless he is willing to pay a premium for the prestige of having a new car every year and for freedom from "ownership worries," it is less costly for him to own than to lease an automobile.

Cardiac and Respiratory Disease Conference

The annual Cardiac and Respiratory Disease Conference will be held on December 11, 1964, at the S.U.I. College of Medicine, Iowa City, under the sponsorship of the S.U.I. Department of Internal Medicine, the Iowa Heart Association, the Iowa Thoracic Society, the Iowa State Department of Health and the Iowa Tuberculosis and Health Association. Each of the half-day sessions is accredited for 3 hrs. by the American Academy of General Practice. There will be no registration fee.

Registration for the morning session will be limited to 60, the capacity of the cardioscope room. The symposium will consist primarily of auscultatory findings, recorded from patients and played back through stethophones, combined with a visual oscilloscopic image.

MORNING SESSION

Cardioscope Room E-326

9:15 a.m. "Abnormalities of Heart Sounds in Diagnosis of Heart Disease"—Lewis E. January, M.D., professor of internal medicine, S.U.I. College of Medicine

9:45 a.m. "Classification and Description of Murmurs"—Dr. January

10:00 a.m. "Auscultatory Diagnosis of Rheumatic Valve Disease"—Ernest O. Theilen, M.D., professor of internal medicine, S.U.I. College of Medicine

10:30 a.m. "Auscultatory Findings in Common Congenital Cardiac Abnormalities"—Donald L. Warkentin, M.D., associate in internal medicine, S.U.I. College of Medicine

Medical Amphitheater, Room E-331

11:15 a.m. "Living With Angina Pectoris"—Oglesby Paul, M.D., professor of medicine, Northwestern University, and past president of the American Heart Association

AFTERNOON SESSION

Medical Amphitheater, Room E-331

1:20 p.m. "Introductory Remarks"—William B. Bean, M.D., head of internal medicine, S.U.I. College of Medicine

1:30 p.m. "Tuberculosis Control in Iowa"—Arthur P. Long, M.D., acting commissioner of health for the State of Iowa

1:45 p.m. "Modern Approach to Tuberculosis Treatment"—William Lester, M.D., chief of chest medicine, National Jewish Hospital, Denver

2:30 p.m. "The Diagnosis and Treatment of Histoplasmosis"—Fred E. Tosh, M.D., medical director, Kansas City Field Station, Epidemiology Branch, USPHS

3:30 p.m. "Treatment of Acute Pulmonary Failure"—William K. Hamilton, M.D., head of anesthesiology, S.U.I. College of Medicine

4:15 p.m. "Place of Steroids in Treatment of Chronic Obstructive Lung Disease"—Paul M. Seebohm, M.D., professor of internal medicine, S.U.I. College of Medicine.

Iowa Association of Medical Assistants

Do You Have It on Your List?

If you have taken time to think about it, you will realize that in less than two months we shall be in 1965. You will soon be receiving your annual supply of new calendars, and marking them for your patients who wish to make appointments in advance.

While you are helping to schedule time for your doctor and his patients, why not think about another kind of calendar for yourself. A little time spent in planning can save you a hurried job, can save you some embarrassment when you have forgotten a deadline, or can schedule work and payment of bills more efficiently.

First, analyze the reports which you are required to make on a monthly, quarterly or annual basis. Check the date each is due, and whether or not it is to be accompanied by an authorization or payment, whether it requires the signature of your employer, or whether your signature for him is acceptable.

Payment of monthly bills can be organized in somewhat the same manner. Some invoices show the following terms: (1) "2/10 EOM," or (2) "2% 10 days," or (3) "30 days Net." The first means that if the invoice is paid by the 10th of the month following date of purchase 2 per cent may be deducted from the total amount of the purchase before Use Tax is added. (To make it easy for you to figure, the Iowa Use Tax is 2 per cent. Just deduct the amount shown for Use Tax.) The second means that you may deduct 2 per cent if you pay within 10 days of the date of purchase—not 10 days from date of delivery or the end of the month. The third means that payment is due in 30 days following date of purchase and that no discount is given. If yours is a large office where there are more than the average number of invoices, it would be well to set up a file based on a 30-day month and place invoices in dated sections according to date when payment is due. This file can be readily checked and payments made to take advantage of any discounts allowed. Monthly or quarterly tax reports which you or your management consultant prepare may be placed in such a file and the check prepared to accompany them on the date they are to be mailed.

Another addition to this file could be a section for each month. Place in the appropriate section a reminder of insurance premiums—monthly, quarterly or semi-annual—and membership fees or dues.

Do you know when your subscriptions to various magazines and other publications expire? Since some of these are not benefits of membership in organizations, but are on a direct subscription basis, it would be well to have a list of all publications you receive, with the frequency of publication of each, the subscription price or dues payment (when last paid, and amount), and the length of the subscription. If as these publications arrive, you check them on the list, you will know whether you are receiving all publications to which you are entitled. Also notify the publisher or distributor promptly of any change of address. An improper address is the most common cause of delayed delivery.

Has your employer ever forgotten a meeting or personal appointment because he didn't make a note of it, or because you or his wife forgot to remind him of it? Check your desk calendar or appointment book to see that a holiday on which the office will be closed is sufficiently marked so that you will not fill it with appointments. Mark the time and place of meetings your doctor attends regularly. Save time on his schedule for his dental appointments, and note any special meetings he wishes to attend so that he can be reminded in advance.

I think it was in Gilbert and Sullivan's "The Mikado" that one of the characters sang, "I have a little list." Our lives have become so complex that we need many lists to remind us of many things. We have shopping lists for our personal needs, and for our home and family; we have "want lists" for the office; we have reminder lists for business meetings—unfinished and new business; and we even have lists on our files! Each section of a file is labelled to tell us exactly what it contains. All of these are time savers and help us to work more efficiently. It isn't that we do not trust our memories. We waste time trying to recall a name, a time or an amount, and a list, properly planned, can do the work of our memory.

Perhaps these suggestions will make you think of other areas in your work where a file could assist you—a list of most frequently used telephone numbers, adjacent to the telephone; a list of insurance companies for which your doctor examines applicants; the correct address of the insurance company's home office or agency to which reports are sent.

Plan your lists or files to suit the needs of your office.

HELEN G. HUGHES

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

Morbidity Report for Month of September, 1964

Diseases	1964 Sept.	1964 Aug.	1963 Sept.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	108	116	78	Jefferson, Johnson
Typhoid fever	0	1	0	
Smallpox	0	0	0	
Measles	13	91	34	Dubuque, Scott
Whooping cough	15	12	35	Des Moines, Polk, Scott
Brucellosis	3	15	10	Dubuque, Polk
Chickenpox	19	34	17	Dubuque
Meningococcic meningitis	0	0	1	
Mumps	58	136	173	Des Moines, Polk
Poliomyelitis	0	0	0	
Infectious hepatitis	26	31	13	Cerro Gordo, Emmet, Ringgold, Scott
Rabies in Animals	24	43	28	Clayton, Fayette, Humboldt
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	17	35	28	For the state
Syphilis	76	90	71	For the state
Gonorrhea	160	199	95	For the state
Histoplasmosis	1	2	2	Polk
Food intoxication	0	12	0	
Meningitis (type unspecified)	4	1	4	Clay, Des Moines, Iowa, Johnson
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	0	
Salmonellosis	8	18	4	Johnson, Polk, Scott, Wapello
Tetanus	2	0	1	Clayton, Johnson
Chancroid	0	0	0	
Encephalitis (type unspecified)	3	3	2	Des Moines, Dubuque, Henry
H. influenzal meningitis	1	0	0	Polk
Amebiasis	0	3	2	
Shigellosis	1	2	3	Polk
Influenza	3	1	0	Polk

Glass Door Safety

The use of sliding glass doors is fast spreading from areas such as California, Arizona and Florida to residences, hospitals, clinics, stores and theatres all over the United States. Glass facilitates the indoor-outdoor concept which contractors and architects are creating in new places or in remodeled older buildings. In some instances, multiple glass units are arranged to make up an entire wall. Along with the convenience and beauty of sliding glass doors comes the potential danger of accidents and glass breakage.

In 1960, reports of injuries associated with this new item began to increase. A national study group was formed in February, 1962, to look into the situation and recommend steps to avoid such accidents. Interested groups such as glass manufacturers, architectural manufacturers, National Safety Council and Public Health Service presonnel joined the study, realizing that new products present new problems and people must be taught how to live with them in the safest possible way. As a result of meetings held by the study groups, the Miami-Dade County Health Department, in Florida, volunteered to conduct a pilot survey in 1962. By June it had investigated 128 breakage reports, 21 of which involved accidental injury. After reviewing the 21 cases, the study group met again and decided that more information was needed before constructive action could be taken. Whereupon the U. S. Public Health Service volunteered to sponsor similar surveys in other parts of the country. Twenty-five local health departments agreed to investigate any glass door injuries reported. This expanded study involved a detailed recording of the circumstances surrounding 108 glass door injuries from 725 follow-up investigations. Since the expanded study and the Dade County study had similar results, the findings of the former will be quoted primarily.

In this study approximately 80 per cent of injuries occurred in the age group 5 through 44. The group 5 through 14 accounted for one-third of all injuries, having double the injury experience of any other age group.

Sixty-eight per cent of the accidents happened to males. The two-thirds experience by males is close to that noted for accidents in general. Every seventh accident required hospitalization. Over 28 per cent of the accidents occurred to people who

had been accustomed to glass doors for more than a year. This indicates that the longer the exposure risk is continued, the greater the chance of accidents. Hurrying was of far greater significance in contributing toward accidents than slipping, crowding and "horseplay."

Seventy-four per cent of the accidents studied were in the home. The Dade County survey found that 95 per cent were in homes. However, the 74 per cent is still a significant number. Over 74 per cent of the accidents happened when persons were traveling from inside to outside.

Physical condition prior to the accident didn't seem to contribute to the accident. People simply thought the door was open and walked through. The reports of only 13 cases indicated that there were decals on the glass, or that there were division or separation bars.

Glass size and thickness cannot be too statistically significant unless they are correlated with degrees of exposure. Reflection, glare or dazzle did not appear to contribute to the difficulty in detecting the presence of a door.

The seriousness of injury from sliding glass doors is recognized, and action has been taken to minimize the hazard inherent in new buildings. New construction will be controlled by Federal Housing Administration's minimum property standards, the Savings and Loan Association's construction standards, and recognized building codes throughout the country.

However, the numbers of existing sliding glass doors installed without safety glass is great, and represents a risk to the occupants of older buildings. This risk could be minimized by a public education program designed to fit various situations and degrees of exposure.

Certainly parents should make sure that all members of the family know of the risks involved when they are careless or indulge in "horseplay" near glass doors and panels. Because familiarity lowers one's alertness, families should review sliding glass door safety at intervals.

Another measure to prevent these accidents is to place decorative decals on the glass surface to catch the eye. This will help bring the glass into focus and perspective so that the person will recognize that glass is there and not attempt to go through it. Decals can be made by using pressure sensitive colored tape, a decorative design cut from colored film, or more elaborate decals. Safety bars (also called mintin bars) can prevent actual contact with glass surfaces. These bars should be mounted at door handle level on the glass panel, and should be used on both sides of swinging doors. Mintin bars are generally available through glass dealers.

Replacing the old glass with the approved safety glass would be the ideal thing to do, Local glass dealers and distributors or manufacturers of sliding glass doors are equipped to make this change.

To keep persons from mistaking a glass panel for an open door, use decals or pressure tape, or place a potted plant about three feet tall or a planter in front of the panel.

Civil Defense Book Covers

The State Office of Civilian Defense has a large supply of school book covers, and it will ship supplies of them direct to individual schools. The covers, which have Civil Defense information printed on them, are water-repellent and will fit almost any size of book.

The state director of civilian defense is Mr. Ray C. Stiles, and his address is Room B-33, State Office Building, Des Moines 50319. Preferably at least, requests should be made through local civilian defense directors.

TB Testing in Schools

(SEE TABLE ON OPPOSITE PAGE)

The school tuberculin testing program is well established in Iowa. Forty-two counties participated during the year July 1, 1962, to June 30, 1963. Thirty-three counties carried the program during the preceding 12 months. For the year recently ended (July 1, 1963, to June 30, 1964), for which the data have not yet been summarized, 43 counties carried the program.

It is to be noted that four test methods, the Mantoux, Heaf, tine and patch, have been used in the program. The State Department of Health regards the Mantoux as the preferred type of test. It is approved by the U. S. Public Health Service and the National Tuberculosis Association. The patch test, once frequently used because of ease of application, is decreasing in use each year. The Heaf test, used in two counties, Black Hawk and Jasper, was carried out on a controlled basis. For example, in Jasper County, the first week of testing was limited to an application of the Heaf test on one forearm and a control Mantoux on the other. Furthermore, nurses experienced in the use of the Heaf injector were on hand to train the staff that was to complete the tests in the county. The tine tests were also considered experimental.

A comparison of the per cent of student reactors in the counties shows in most instances a correlation with the number of cases of tuberculosis we have on record for those counties, and furthermore, shows some correlation with the rate of deaths per 100,000 population.

Selected Grades Tuberculin Testing Programs Iowa, July 1962-June 1963

County	Type of Testing	Schls. Tested	Stdnts. Tested	% Student Reactors	Personnel Tested	% Personnel Reactors	Contacts Tested	% Contact Reactors	Referred for Large X-ray
Allamakee	Mantoux	32	1,280	0.4	314	15.9	13	15.4	1
Appanoose	Mantoux	18	815	5.5	175	27.4	59	6.8	2
Black Hawk	Heaf	27	2,824	(1.6)	271	(16.2)	*	*	*
Bremer	Mantoux	7	606	1.5	73	12.3	(x-rayed only)		—
Buchanan	Mantoux	28	1,346	1.6	265	22.6	55	14.5	—
Carroll	Mantoux	21	1,910	1.8	296	15.2	307	7.2	—
Cedar	Mantoux	13	1,299	1.8	220	18.6	31	12.9	—
Cherokee	Patch	9	1,348	0.1	72	0.0	*	*	*
Clarke	Mantoux	2	431	1.4	53	32.1	7	14.3	1
Clayton	Mantoux	19	1,307	2.1	291	20.3	79	29.1	—
Dallas	Mantoux	16	1,577	1.6	145	13.8	23	17.4	*
Davis	Mantoux	11	488	1.0	142	21.1	48	10.4	6
Decatur	Mantoux	6	723	1.2	179	17.9	7	0.0	—
Des Moines	Mantoux	40	2,591	3.5	(334)	(19.5)	*	*	3
Grundy	Mantoux	7	1,036	1.4	200	13.0	38	5.3	1
Guthrie	Mantoux	7	1,047	1.7	161	(5.6)	49	8.2	1
Hamilton	Patch	11	1,323	(0.8)	255	(7.8)	(x-rayed only)		4
Hancock	Mantoux	7	1,041	0.5	309	16.8	29	13.8	1
Hardin	Mantoux	10	1,653	1.0	360	17.5	62	19.4	1
Henry	Mantoux	17	1,047	1.3	303	20.8	14	21.4	4
Howard	Mantoux	12	1,129	1.4	259	24.3	47	2.1	1
Ida	Mantoux	4	660	0.8	155	5.8	*	*	*
Iowa	Mantoux	13	1,273	0.9	236	15.7	17	17.6	1
Jackson	Mantoux	32	1,381	1.8	216	18.1	9	11.1	(All Large)
Jasper	Heaf	4	1,263	2.3	63	15.9	*	*	—
Johnson	Tine	55	2,986	1.9	758	18.9	*	*	*
Lee	Mantoux	32	2,896	1.5	493	23.9	99	14.1	*
Linn	Mantoux	(69)	8,157	3.4	1,834	21.8	284	15.5	*
Louisa	Mantoux	5	780	4.0	190	16.8	52	7.7	—
Mills	Mantoux	10	637	1.9	130	21.5	65	6.2	1
Mitchell	Mantoux	6	1,546	2.1	145	22.1	30	6.7	—
Muscatine	Tine	(31)	2,239	0.5	286	10.1	*	*	*
Plymouth	Patch	13	1,912	0.8	313	12.1	81	2.5	1
Poweshiek	Mantuox	4	1,009	2.2	306	22.5	30	13.3	4
Sioux	Mantuox	28	1,980	0.5	305	14.8	53	11.3	(All Large)
Tama	Mantuox	20	1,459	1.7	287	26.1	99	1.0	1
Wapello	Mantuox	(21)	2,227	2.6	(x-rayed only)		*	*	*
Washington	Mantuox	16	1,230	0.7	274	18.2	5	60.0	—
Webster	Tine	9	1,038	1.7	189	11.6	14	21.4	*
Winneshiek	Mantoux	11	1,146	1.8	298	30.5	47	59.6	1
Woodbury	Mantoux	(26)	3,605	1.8	*	*	*	*	*
Wright	Mantoux	7	1,599	0.9	406	17.2	38	39.5	—
TOTAL 42		736	67,844	1.9	11,561	18.6	1,791	13.0	(43)*

* Unknown
( ) Approximate Numbers

Woman's Auxiliary News

For Better Health—Better World, Speak Up, Auxiliary Members!

This was the recurrent theme of the annual Fall Conference of the Woman's Auxiliary to the AMA, October 4-7 in Chicago. More than 200 national officers, chairmen, state presidents and presidents-elect not only learned what to talk about—they learned how to do it.

At the October 5 session, AMA President Donovan Ward, M.D., asked the physicians' wives to tell people the truth of what medicine has done, and AMA Executive Vice President F. J. L. Blasingame, M.D., urged them to serve as a source of information, and generators of energy. "Neither the AMA nor the Auxiliary can afford a posture of bland pleasantness," he added.

Ways of organizing and delivering a speech were presented at a speech training seminar conducted by Smith Kline & French Laboratories. It was followed by actual practice sessions in small groups.

A leadership training session titled, "She Who Dares to *Lead* Must Choose to *Learn*" wound up the Monday program. Members of the Board of Directors made these pertinent points:

1. Leadership development is too often left to chance. You must make it easy for members to speak and act, and to see that they have training in both technical and social skills.

2. The presiding officer must have: presence; promptness; preparation; parliamentary procedure; patience and perseverance.

3. The success or failure of an organization is not measured by the number of its committees but by the number of them that do their *assigned* jobs. Avoid appointing the same workers over and over.

4. Lack of communication, both internal and external, is our greatest sin of omission. Conduct orientation sessions for new members; explain the true reasons for benefits; keep trivia out of your newsletters.

5. Reports should be accurate presentations of facts or compilations of statistics. When asked to give numbers, "almost all" or "a few" does *not* answer the question.

In summarizing the leadership training program, Mrs. John M. Chenault, moderator, emphasized the importance of selecting state nominating committees. These committees are responsible for both state and national leadership.

Monday evening all members of the conference met in regional groups for dinner.

Following a parliamentary review Tuesday morning, the first vice-president, Mrs. Asher Yaguda, and the four regional vice presidents, presented a five-year plan for membership—"The Bold Step." To close the gap between AMA and Auxiliary memberships, they suggested that Auxiliary dues be included in the doctor's county society dues.

Suggestions for new programs, a review of health legislation and presentation of the Precinct Action Course, and a "Miss AMA-ERF" pageant were presented by the respective chairmen, Mrs. Norman Gardner, Mrs. Joseph Leonard and Mrs. Erle Wilkinson.

Mrs. C. A. Colombi pointed out that "Community Service is everybody's business." Georgia's "Picture Arrangement of Community Service," Denver's "Operation Friendship," a program to help foreign doctors and their families obtain furnishings for their homes; Connecticut's Pre-School Visual Screening project and Ohio's Nutritional Know-How for Teens and Sub-teens were given as examples of the wide area covered by the Auxiliary.

Mrs. Herbert Ulrich presented a health careers program for high school assemblies, in which each of four panelists told the reasons for his or her choice of career, and its requirements and benefits.

AMA Past-President Edward Annis, M.D., the Tuesday luncheon speaker, discussed the importance of electing senators and representatives who are sincere, dedicated, willing to learn the facts, and averse to voting one way or the other simply to make political headlines.

Tuesday afternoon's speakers, in discussing additional Auxiliary service projects, said:

1. Suicide-prevention centers must be open 24 hours a day, 365 days a year. While they are not the complete answer to the suicide problem, they *are* of great value.

2. We are still a rural nation. The Auxiliary should do something practical in rural health—a polio or smallpox clinic, a health survey of the community.

3. The medical supplies we send to foreign nations and the work we do there tells others what Americans are really like. In some places, we must fight not only disease but also superstition.

Wrapping up the program was a placard parade

on safety problems and a discussion of medical self-help training and the Block Mother Plan, presented by the respective chairmen.

At the final session on Wednesday, AMA Assistant Executive Vice President Ernest B. Howard, M.D. spoke on current AMA activities. Mrs. John Wagner discussed the BULLETIN as a communications medium, and Mrs. Lawrence Rapee, Mrs. Karl Ritter, Mrs. G. Prentiss Lee and Mrs. Hiram Cochran gave a methods presentation.

Also featured were a talk on medicine and religion; a presentation of AMA Health Education materials; and "Not As It Was," a new AMA film described elsewhere in this issue of WOMAN'S AUXILIARY NEWS. It is excellent, and available to you.

On Sunday, October 4, Conference members attended an AMPAC dinner, at which the guest speaker was Senator Everett Dirksen, Senate minority leader.

AMA-ERF

The AMA-ERF regional workshop was held at the Drake Hotel in Chicago, October 1 and 2.

The meetings were conducted by Mrs. Erle E. Wilkinson, national AMA-ERF chairman, and Mrs. Chester Young, north central regional chairman.

The meetings were tremendously interesting and stimulating, and covered the history of AMA-ERF, duties of the state chairman, and the contents of the AMA-ERF portfolio, which included educational and informational as well as fund-raising materials.

The general discussion period was of particular interest to all of us, for it was an exchange of money-raising methods. Most of the states are selling note paper and playing cards, and are participating in the Medallion Christmas card plan, plus many other fund raising activities such as publishing a cook book, giving dinner dances, conducting gourmet dinners, or staging hosiery or toy sales. One state auxiliary has its members serve as cigarette girls during the convention. In addition there are handicraft sales, antique shows, plus many more.

We learned that the State University of Iowa Medical College has benefited in the last two years by a gift of $12,000 from AMA-ERF undesignated funds, and that 319 loans totaling $250,000.00 have been made to students, interns and residents in Iowa.

Knowing that our Iowa Auxiliary contributed only a little over a thousand dollars last year, I came home from Chicago resolved to try to bring back to our Iowa Auxiliary members the importance of doing our share of this most valuable work.

—BERNIS WICKS (MRS. RALPH)
AMA-ERF Chairman

Notes on Current Events and AMA Activities

Speaking at the 21st Conference of State Presidents, Presidents-elect, National Officers and Chairmen, held at the Drake Hotel in Chicago, October 4-7, Dr. Ernest B. Howard, assistant executive vice-president of the AMA, apprised the conferees on current events and AMA activities.

Beginning in the area of legislative activity, Dr. Howard reviewed the administration's drive to push medical care for the aged proposals through this session of Congress. The Gore amendment (King-Anderson bill) was hastily tacked onto the pending Senate bill for Society Security increases after the health care measure had failed to receive endorsement from the House Ways and Means Committee. Immediately after proposing the health care amendment, Senator Gore demanded a vote, but his request was defeated. The following day, however, the vote was allowed, the bill for a S. S. increase with the Gore amendment attached was approved by a narrow margin in the Senate, and the bill was then sent to the House.

Throughout the following week, House and Senate conferences were held in an effort to resolve the differences between the House-passed and the Senate-passed versions of the Social Security amendments. After the eighth meeting, it became apparent that the increases for Social Security benefits would be approved only if the medicare amendment were deleted. Senators Gore, Long, Smathers and Anderson insisted on retaining the medicare-tax amendment, and when it became evident that this was impossible if the bill were to receive the necessary House approval, they withdrew the entire Social Security amendments bill (H.R. 11865), thus depriving many of our older citizens of increased Social Security benefits.

In citing his reasons for withdrawing the entire bill, rather than relinquishing his medicare tax proposal, Senator Gore reaffirmed his determination to secure a medicare bill and declared "This means the President will have to go to the people and ask for a mandate on this issue (medicare) in November."

Another area of interest to physicians and their wives will be the National Education Program of the AMA. This has begun with newspaper ads in thousands of papers across the country late in October. These ads present the facts and comparisons of King-Anderson and Kerr-Mills programs. Sponsored at the local medical society level, these ads will help the public to understand these programs. New films, public service radio flashes, and brochures will also help medicine tell its story.

AMA-sponsored conferences are scheduled for study and analysis of medical care cost and use of pre-payment insurance, accreditation of nursing homes, the effect of the National Institutes of

Health categorical programs, and a forum to discuss and correlate activities and requirements of various specialty boards.

The complete report of the Miller Commission, which was appointed to conduct a comprehensive survey of medical education will be completed this coming year.

—JANET ELLIS

"A Family Affair"

The Chamber of Commerce of the United States has produced an informative new 30-minute film titled "A Family Affair." The film points out that the problems which confront the members of an average family have much in common with typical legislative issues on the national scene. And just as the individual family has an obligation to solve the problems confronting it, so all citizens share a responsibility to help resolve the major legislative issues confronting our country today. The film further demonstrates how the individual can evaluate current legislative proposals by measuring them against four basic principles of our democratic system, namely, individual freedom, free competitive markets, steady economic progress and limited government. These are the four measuring sticks, according to the film, which the individual should use in deciding the merits of specific legislative proposals, and in searching for effective solutions to national problems.

For further information, write the Audio-Visual Services Department, Chamber of Commerce of the United States, 1615 H Street N. W., Washington, D. C. 20006.

Man's Great Need: Healing

Dr. Walter Judd spoke on "Man's Great Need: Healing" at the IMS Fall Conference of County Society Officers and Other Representatives. Doctors, he said, have hard heads but warm hearts. They have courage—courage to make decisions, and courage to carry through with their decisions. Since man's first need is for life, doctors save life and then assist him in living with a minimum of pain. Increasingly, however, there is a need throughout our nation for cooperation between medicine and religion. As life needs medicine, so does it need religion. If doctors are really to heal the sick, they must help people live with themselves emotionally.

Wisdom cannot be purchased. Health care is so good that we now live 21 years longer than people used to do. But if we are to live profitably and happily, we must look back at our experiences and gain from the knowledge of those with wisdom. For that reason, we should not throw our elderly people into the discard. One of our greatest needs for nursing homes today results from the fact that elderly people have been deprived of their occupations. Age expels man from industry when the calendar says 65 years. Depression goes on to melancholia. Physical needs, emotional needs, environmental needs—doctors must be concerned with *all* of life. To meet all the needs that people have demands the skills of both physicians and clergymen working together.

Dr. Judd declared that life consists basically of four things: work, play, love and worship. Work is learning to make a living—producing or making available goods or services that people need. Play or recreation is not just exercise, but is doing whatever is necessary to create pleasure of mind, whether it be watching birds, enjoying literature or music, or communicating. Health requires opportunity to create and also recreation. Education creates a sound mind; medicine creates a sound body; religion helps one use a sound mind and a sound body. Home is the pattern of every good society. Love grows throughout our lives when there is someone who loves us, when we have some place—a home—to which to go, and when we have a job or the prospect of a job.

What, then, is a human being? Various people at various times have given him a lesser status, but we believe, Dr. Judd said, that man is the child of God—that he is the only animal that prays. How well can the clergyman heal the soul if the body is tormented? How well can the physician heal the body if the mind is tormented? The two healing professions need to work together. Religion brings happiness, for one is happy when he cares, has the right relationships and is merciful.

Medicine is a means to a greater end than merely the restoration of health; it must assist in restoring the whole man! Physicians and clergymen need one another, for each helps the other. We can do no better than to walk in the footsteps of the Great Healer, who made men whole.

—MRS. N. W. IRVING, JR.

Next—"Plumbicare"

Plumbicare is a plan by which we can save through Social Security for our old-age plumbing bills. It is a known fact that people over 65 have more plumbing trouble than do younger people.

Under the Plumbicare Plan, all of the plumbing bills of those over 65 would be paid. The whole thing would be financed by Social Security. We all know that many senior citizens are poverty stricken, and we would not want them to be faced by staggering plumbing bills in their twilight years.

If we can unite our brethren in Washington and force passage of Plumbicare, the way will then be clear for Electricare, Autocare, TeeVee care, and then the ultimate goal of our welfare state, Embalmicare. (Port Townsend, Washington, LEADER.)

New Auxiliary Program The Block Mother Plan

A disaster can befall any child while he is riding his bike, or walking to or from school. Severe weather can suddenly develop, or he can become afflicted with sudden illness or fatigue. He can be injured in a fall from his bicycle, can be attacked by a dog or by older children, or a stranger may attempt to lure or molest him. These and many other things besides are grave disasters in the lives of children, and it is wise and humane to provide a safe place of refuge for him from his danger, a first aid station to treat his injuries, and a communications point for notifying parents or school authorities of his needs. These benefits are provided when the *Block Mother Plan* has been put into action.

The *Block Mother Plan* is the original idea of a physician's wife, Mrs. James B. Mercer, of Merriam, Kansas, who worked through her local P.T.A. to put the plan into action. It is now a project of the Woman's Auxiliary to the American Medical Association, so that this same plan can be put into action all over the nation.

The plan is simple and involves little expense. In Merriam, Kansas, notes were sent home to the parents in the hands of the school children, explaining the plan, soliciting volunteers to designate their homes by means of signs, and asking for donations of 50¢ to help pay for the eight-inch-square metal signs bearing the words "Block Mother" in bright orange and black.

The mothers volunteered to be on duty during the half-hour before school commenced in the morning, and the half-hour following dismissal of school in the afternoon. The sings were hung in prominent positions, on trees or posts to designate the Block Mothers' homes. If a mother found that she must be away from home at some time, she arranged with a neighbor to substitute for her, and moved the sign to her house. To make the children well acquainted with the signs, mimeographed copies of a picture of the signs were distributed in school for the children to color in black and orange.

The mothers have simple first-aid supplies on hand, and their chief duty is to telephone the child's parents or the school authorities, and to give the child a place of refuge until he is called for.

Through the newspapers the public was informed of the plan, and advised that in no way were the Block Mothers to be regarded as baby sitters.

Each community has its special problems, and its special housing and population patterns. Some communities abound in large apartment houses; others have much wooded area. Each situation calls for special ingenuity in working out a plan, but the need exists wherever children are en route to or from school.

Many organizations besides the P.T.A. could be involved in the plan, but it is desirable for it to be kept distinctly a project of Medical Society Auxiliary, or of individual physicians' wives, and to have the plan retain its identity as an Auxiliary project by being referred to as "The Block Mother Plan of the Woman's Auxiliary to the American Medical Association."

Remarks of the Honorable Everett M. Dirksen, U. S. Senator From Illinois

Senator Dirksen, who is the ranking Republican member of the Senate Judiciary Committee and a member of the Senate Finance Committee, was the guest speaker at the AMPAC dinner for Fall Conference members in Chicago. Entitling his address "The State of the Union," a title which, he noted, allows a speaker to talk about anything under the sun, and which, like women's fashions, can be either in Mother Hubbard style, so as to cover everything, but touch nothing, or in the style of the new diaphanous gown, to touch everything and cover nothing.

He reminded his listeners that the Constitution was 177 years old in September and that it has been 472 years since the discovery of America. It is time, he said, for us to rediscover America, if our children are to have the same opportunities we have had. We must not allow centralization of government, for "it can remake America and *you won't like it.*"

Senator Dirksen's mother came to this country as a young girl of 17 years. She came because she and her family realized that under the political tyranny of Bismarck, and the welfare state he was creating, she had no hope to enjoy life as a free individual. With a tag around her neck which said, in effect, "Deliver me to Pekin, Illinois," she arrived in America.

Every bill which provides federal aid, takes the advantage away from the people and gives control to the bureaucracy in Washington. Never does Congress let money go out of the treasury without some type of control, denials to the contrary notwithstanding.

Beginning with the Wagner-Dingell medicare bill, Senator Dirksen reviewed the history of this type of legislation in America and the consequences of this type of legislation. In England the practice of medicine is regulated by 1,700 pages of fine print. These rigid controls of government have robbed the patient of good care, and have robbed future physicians of the incentive to enter the profession. In France, 18 billion dollars is going for medicare, and the government is fast moving toward bankruptcy.

The medicare fight is not only the doctors' fight, but America's fight, Senator Dirksen said. " 'Socialize' has been worn threadbare," he said. "The

new word is 'Control,' and as everyone should know, when we are controlled we do not have freedom." Even Norman Thomas, the avowed leader of the Socialist Party in America, admits that everything his party ever wanted is included in present administration's proposals. "We must get out and spread the gospel," said Senator Dirksen, "so that our children and grandchildren can never say that we, their parents, let the socialists remake our country."

In the words of Benjamin Franklin, when he spoke in Independence Hall in Philadelphia, "We have a Republic, if *you* can keep it."

Auxiliary Activities Around The Hawkeye State

Clinton County

This year's Charity Ball, sponsored by the Clinton County Medical Auxiliary, will be held December 5 at the Country Club. Plans for the event were discussed at a dinner meeting of the Auxiliary recently. Chairmen for the ball are Mrs. V. W. Petersen and Mrs. D. R. Schumacher. Mrs. W. H. Griffith and Mrs. J. F. Edwards are co-chairmen of the decorating committee. Committee appointments will be announced later.

The event, traditionally held in December, opens the holiday season at the Club. Proceeds from the ball are used to purchase equipment for the county's three hospitals.

Pottawattamie County

Mrs. D. T. Stroy, program chariman, outlined plans for the coming year when the members of Pottawattamie County Medical Auxiliary met for a coffee at the home of Mrs. Isaac Sternhill for their September meeting.

The Auxiliary's Pledge of Loyalty

"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."

The group will contribute to two projects during the fiscal year—one to benefit a local medical facility which will be determined at a later date, and one to benefit a national facility—the American Medical Association Education and Research Foundation.

Mrs. R. L. Hopp, president of the Auxiliary, appointed the following committee chairmen: Mrs. M. E. Olsen of Minden, AMA-ERF; Mrs. G. R. Landry, mental health; Mrs. J. L. Knott, community affairs; Mrs. D. V. Hirst, nursing services; and Mrs. C. V. Edwards, Jr., legislative matters.

Mrs. W. E. Wicklund was the speaker. She explained the planning stages of the proposed Volunteer Bureau of the Community Welfare Council.

Polk County

The Woman's Auxiliary and the Polk County Medical Society started the fall season with a joint meeting on September 16 at the Wakonda Country Club. They enjoyed a social hour, followed by dinner.

A "peppy" after-dinner talk was given by Mrs. June Vance, of Omaha, Nebraska, who was previously enjoyed at our State Meeting. Her speech, "How to Keep Your Motor Running," was enthusiastically received by both the doctors and their wives. Mrs. Vance is president of the Omaha Association for Mentally Retarded Children.

We hope the excellent turn-out for the first meeting will be an indicator for a good year for both Polk County Medical Society and the Woman's Auxiliary.

The first formal meeting of the Auxiliary was a luncheon held at the Hotel Kirkwood. The guest speaker on the program was Rev. Russell Striffler, chaplain at Iowa Methodist Hospital, whose topic was "Brother Juniper's New Role." Mrs. Earl Redfield and Mrs. James Dickens were in charge of arrangements.

A reception for members of the class of 1964 of the School of Practical Nursing, in Des Moines, was held following graduation ceremonies at the Benjamin Franklin Junior High School auditorium. Mrs. W. B. Chase, Jr., was chairman of the reception. She was assisted by Mesdames D. W. Coughlan, Paul From, R. E. Hines and J. H. McNamee. All are members of the Auxiliary to the Polk County Medical Society.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

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President-Elect—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

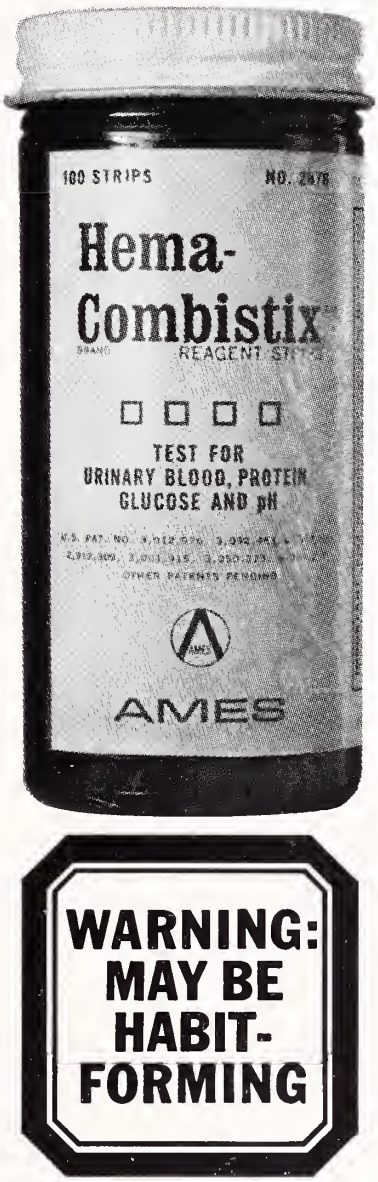
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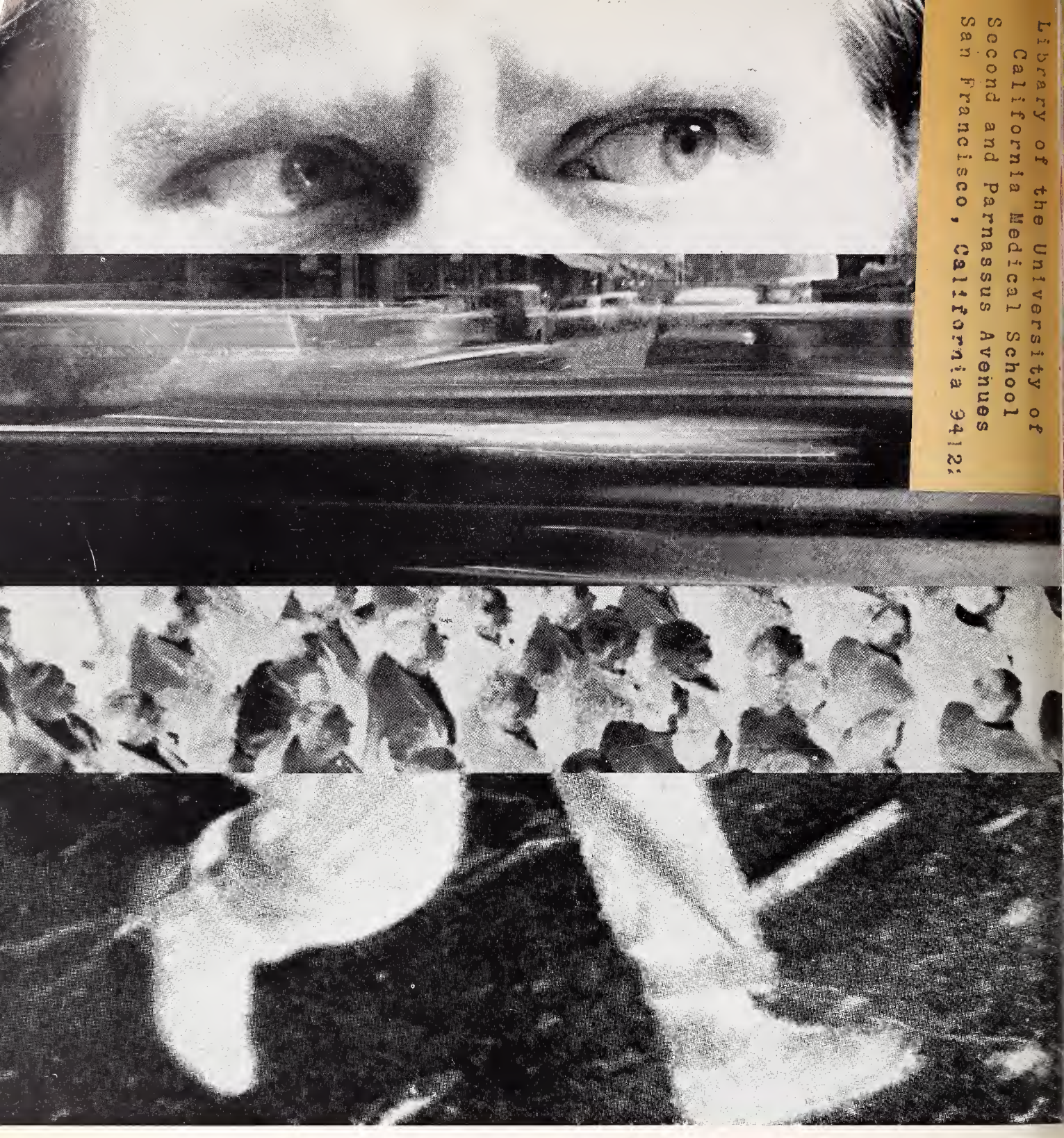
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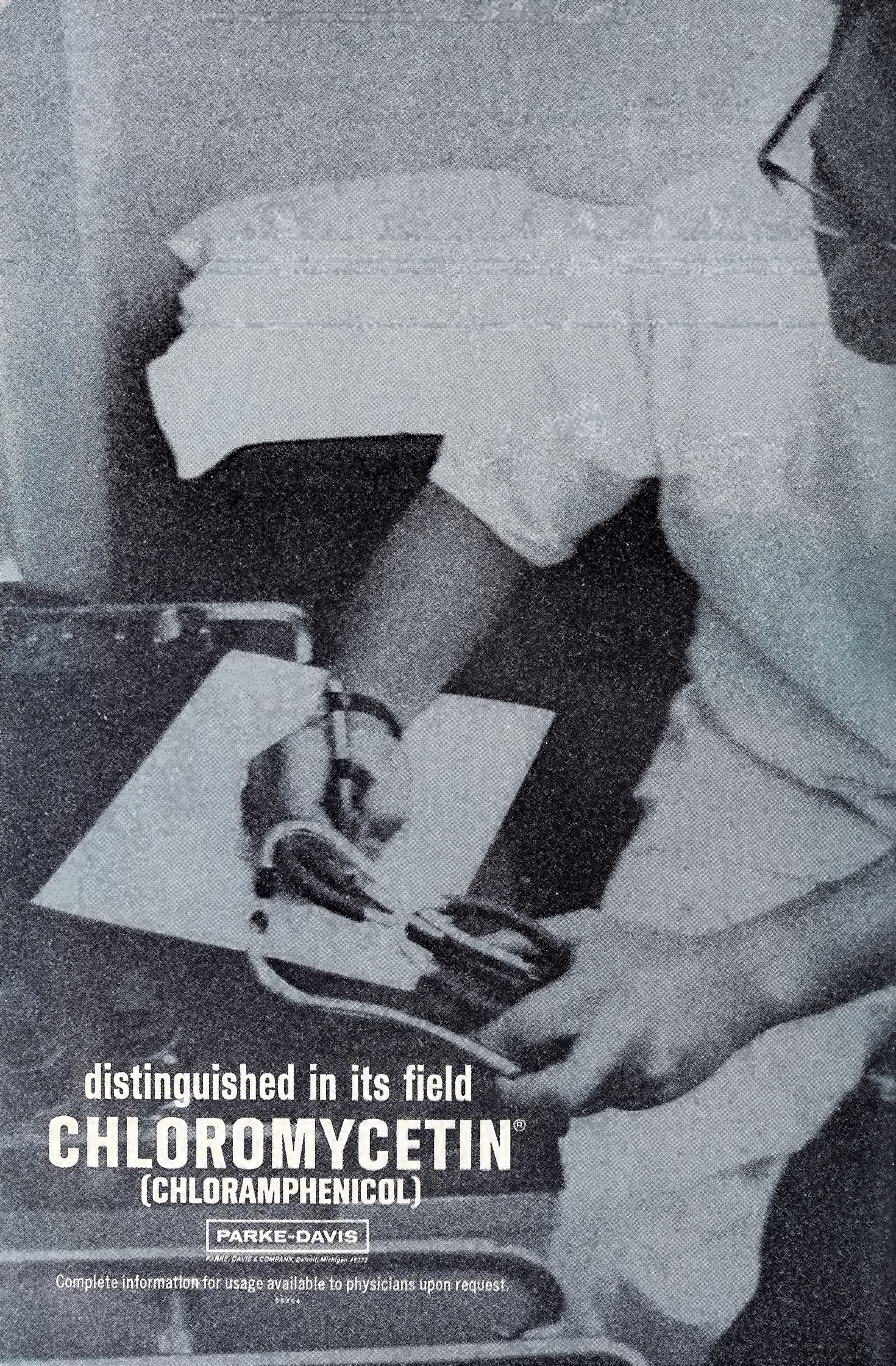
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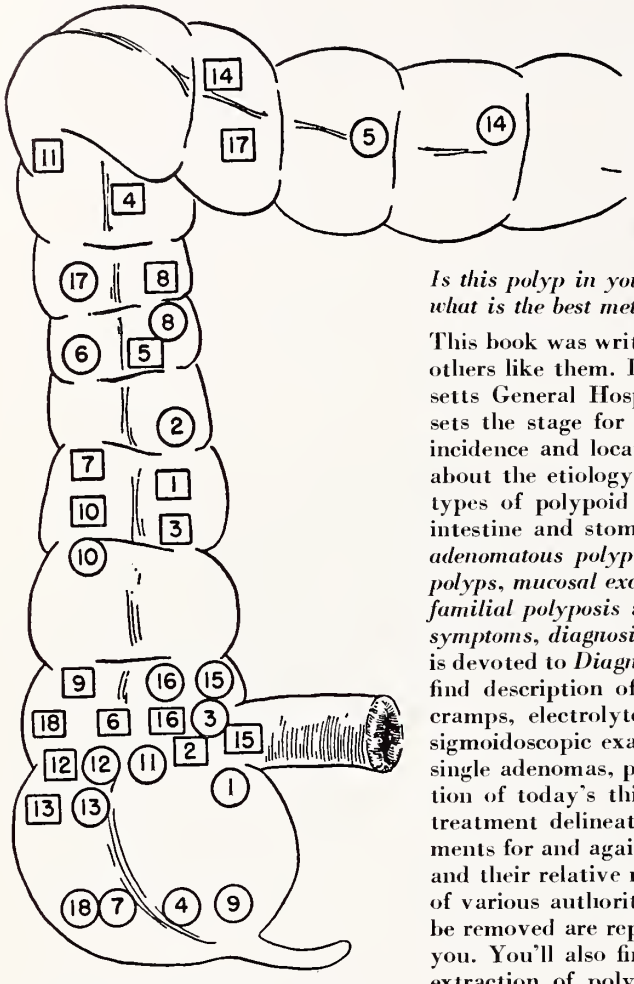


Figure 3-25. *Location of cancer and simple adenomas in resected cancers of the right colon. Squares locate cancers; circles, adenomas.*

Polypoid Lesions of the Gastrointestinal Tract

by Claude E. Welch, M.D.

Is this polyp in your patient benign or malignant? Should it be removed? If so, what is the best method for this particular lesion in this particular patient?

This book was written to help you answer questions such as those above, and others like them. Its author has drawn on the experience of 1124 Massachusetts General Hospital patients, plus many personal cases. Dr. Welch first sets the stage for a fruitful discussion by defining terms, by discussing the incidence and location of polypoid tumors, and summarizing what is known about the etiology of adenomas. He then proceeds to illuminate the various types of polypoid lesions you'll encounter in the colon and rectum, small intestine and stomach. He describes and illustrates common lesions such as *adenomatous polyps* and *papillary adenomas*, and such rare ones as *pseudopolyps*, *mucosal excrescences*, *Peutz-Jeghers polyps*, etc. *Multiple polyposis* and *familial polyposis* are also completely covered. *Etiology*, *incidence*, *pathology*, *symptoms*, *diagnosis*, *prognosis*, *treatment*, are clearly set forth. A full chapter is devoted to *Diagnosis of Polypoid Lesions of the Colon and Rectum*. Here you'll find description of symptoms (bleeding, change in bowel habit, abdominal cramps, electrolyte imbalance, etc.) and physical findings from palpation, sigmoidoscopic examination, and radiologic examination. The relationship of single adenomas, papillary adenomas, and cancer is discussed, with examination of today's thinking on the adenoma-cancer relationship. A chapter on treatment delineates location and identification of polyps, giving you arguments for and against their removal. Polypectomy and resection are discussed and their relative merits contrasted. If resection is decided upon, the opinion of various authorities as to the amount of bowel and mesentery that should be removed are reported. The author states his own conclusions to help guide you. You'll also find helpful consideration of sub-total and total colectomy, extraction of polyps via the anus, posterior proctotomy, resection of the rectum, and sigmoidoscopic removal of polyps.

By CLAUDE E. WELCH, M.D., Visiting Surgeon, Massachusetts General Hospital, Boston; and Clinical Professor of Surgery, Harvard Medical School, Boston. 148 pages. 6⅛" x 9¼", illustrated. $7.50. *New—Just Ready!*

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Scientific Articles

The Medical Treatment of Peptic Ulcer

W. TURNER BYNUM, M.D., F.A.C.P.
Oklahoma City, Oklahoma

THERE HAVE BEEN innumerable fads in the treatment of peptic ulcer disease since its first recognition as a clinical entity. It was not until 1911, when Sippy described his regimen for the care of this disease, that the treatment of such patients was placed on a physiologic basis. Many if not most clinicians are of the opinion that very little actual improvement in the strictly medical measures for the treatment of this malady has occurred during the ensuing 50 years.

In 1943, I wrote a paper entitled "Medical Fads in the Treatment of Peptic Ulcer." In the somewhat limited literature available at a new naval hospital, I had been able to uncover 43 different medically advocated approaches to the care of this disease that had been announced in the previous 10 years. The most recent paper at that time was one extolling the virtues of a detergent, Dreft, for that purpose. The preparation is still in use, but I hope it is utilized more frequently for cleaning dishes than for treating ulcers.

Ten years later, I brought my paper up to date and was able to uncover an additional 53 medicinal approaches, the latest and most enthusiastically advocated one being an extract of mare's urine.

I note that in the latest issue of Bockus's GASTROENTEROLOGY, over 50 medicinal measures are discussed, most of which were initially advocated within the past decade. In my opinion the "hottest" discovery during this most recent decade is the causative relationship between polyglandular adenomata and refractory peptic ulcerations. Certainly the newest and "coldest" is gastric freezing.

More recent investigations have certified to the value and the physioligic basis of Sippy's idea of placing both the patient and his overactive stomach "at rest." I shall mention only a few of the other recent findings—the part played by gastrin secretion and insulin in stimulating the gastric secretion of hydrochloric acid and pepsin; the disappointments with attempts at inhibiting secretion with gastrone, enterogastrone and urogastrone; and the part played by overdistention of the antrum in stimulating peptic activity and in overcoming the hoped-for beneficial effects of the last-named enzymes. Nevertheless, many clinicians, including my colleague Dr. Stewart Wolf, have tended to deprecate the importance of milk, antacids, anticholinergics and other elements of a bland diet in aiding healing in patients with this disease.

Thus a sound physiologic basis has been provided for Sippy's insistence on frequent small feedings of bland substances, mostly dairy products, for although it has been repeatedly demonstrated that milk protein has a tendency to increase the production of hydrochloric acid, milk is the only readily available food substance which actually neutralizes up to one-third its volume of hydrochloric acid. Experimental evidence has also supported Sippy's prohibition against condiments, meat extracts, and acid, tart or highly seasoned foods, by showing that they increase both hydrochloric acid and pepsin in quantity and in concentration. All of this is contrary to the advocates of a free diet, and Dr. Wolf's demonstration that Tom's stomach could withstand anything that was not irritating to the skin of his forearm!

Many of the more experienced clinicians feel that the deprecators of Sippy's regime who advo-

Dr. Bynum made this presentation at the annual meeting of the Iowa Medical Society, in Des Moines, in April, 1964.

cate a free diet without anticholinergics or antacids, and who place no limit on the quantity that may be ingested at any one feeding, have placed too much emphasis on the purely psychic basis of gastric hypersecretion, hypermotility and resultant peptic ulceration.

The prime importance of individualizing the medical management of peptic ulcer cannot be overemphasized! Just as we should not treat all diabetics, allergic or hypertensive patients alike, certainly we should not try to standardize too much the treatment of all peptic ulcers.

INDIVIDUALIZATION

Since all peptic ulcers aren't caused by the same inciting factor or factors, they don't all respond to the same therapeutic measures. Only one physiologic malfunction is common to all peptic ulcers, and that is gastric hyperfunction, but even its components—gastric hypersecretion and hypermotility—vary in individual patients, and thus won't be responsive to overstandardized methods of treatment.

When one has established the diagnosis of peptic ulcer—or even of gastric hyperfunction—he should seek the principal factor or factors that have been operative in its etiology.

It is only palliative to restrict diet, and to administer antacids and anticholinergics in a peptic ulcer patient who may have a disease of the central nervous system, or more specifically in the diencephalon, or in the thyroid gland, pituitary gland or adrenal glands, pancreas, parathyroid or liver (particularly its biliary tract), which may have been primarily responsible for inducing the gastric hyperfunction leading to the ulceration.

No permanent improvement can be expected until the primary disease has been controlled, but there are other conditions which must be treated. These may consist of chronic infections in the sinuses, teeth, tonsils, bronchi or lungs. Chronic sepsis in the biliary tract, pancreas, diverticuli of the gastrointestinal tract, urinary-tract infection or other foci must be minimized or eradicated.

In the long-term management of the disease and in the prevention of recurrence, it is of signal importance to educate the patient about his disease and the inciting factors he must avoid or minimize. The patient must be alerted to the personality factors which aggravate his condition, and to the recognized methods of coping with these problems. Where possible, he should manipulate his environment to lessen the persistent stresses and aggravants. The patient should be encouraged to ventilate his hurt feelings, to overcome his resentments and to "act out" his aggressions—preferably in a socially acceptable manner.

He should be taught that excesses of alcohol, coffee, tobacco or highly seasoned foods, overloading of the stomach, prolonged abstinence from food, and acute or chronic infections may at one time or another be the aggravant responsible for a recurrence of ulceration in most ulcer patients. However, he should be warned that the aggravant present in most ulcer patients most of the time is emotional stress and tension. He can best minimize these by means of regular periods of objective self-analysis under minimal guidance from his physician, his minister or a wise friend, and rarely a psychiatrist.

The specific medications to be used are (1) antacids, (2) anticholinergics, and (3) sedatives and tranquilizers.

ANTICHOLINERGIC DRUGS

In the treatment of gastric hyperfunction, the administering of a preparation which would reliably diminish the formation of acid, and at the same time reduce hypermotility, would indeed be ideal. A treatment of that sort would be more physiologic than an attempt to neutralize excess acid when once it was formed. This is admirably accomplished in the fasting, anesthetized stomach of a laboratory dog by any of at least 21 different synthetic anticholinergics that are presently on the market. All of them are effective blockers of caffeine, alcohol and even of histamine stimulation as long as the animals are given frequent small feedings. However when large feedings have been administered, their action is unpredictable. This was clearly shown by Lennard Jones in his experiments with the new so-called selective antisecretory agent paldine methylsulfate (Nacton).*

These remarks are not meant to negate the use of all anticholinergics, but to plead for their use in a judicious manner. They do not produce a "medical vagotomy." To use them early, along with small, frequent feedings, and to support them with physical and emotional rest, still seem physiologic. Anticholinergics are best used to control nighttime symptoms in hypersecretors with demonstrable hypermotility. In our experience, belladonna and/or atropine administered in individualized physiologic dosages (just below those which produce evidence of atropine toxicity) will prove as effective as any of the newer synthetic preparations. These drugs are particularly effective in controlling pain associated with peptic ulcer. For this very reason, anticholinergics are sometimes dangerous, for they may give the patient a false sense of security and may lead him to neglect the other factors that are important in the treatment of this disease. There is no proof of their value in accelerating healing.

Anticholinergics are contraindicated in cases of delayed gastric emptying, glaucoma, dysuria or prostatism, hemorrhage, severe constipation, debility or senility.

---

* Jones, J. E. L.: Experimental and clinical observation of paldine in treatment of duodenal ulcer. BRITISH M. J., 1:1071-1076, (Apr. 15) 1961.

SEDATION

Since physical and emotional rest are of paramount importance in any judicious approach to the treatment of peptic ulcer, the proper and adequate employment of antianxiety and soporific drugs is nearly essential. The Russians report remarkable results with prolonged sleep therapy in many refractory ulcer patients. Here again, we believe the specific needs of the patient should be individualized. For the average patient, 0.1 mg. of phenobarbital three times daily is adequate. For the more disturbed patient, the tranquilizers are of great help. For the depressed, the antidepressants may make the difference between success and failure.

ANTACIDS

Far too much has been written and said about the relative efficiencies of the various preparations on the market in neutralizing excess acid. In the short-term treatment of a young individual with normal kidneys, I believe it matters little whether absorbable or nonabsorbable preparations are used. Indeed many patients with adequate dietary adjustments may not need them at all. However, if it is important to limit calories, or if nocturnal hypersecretion needs attention, I believe antacids are valuable additions to our therapeutic regimen. They should be employed in quantities sufficient to keep the patient pain-free and to keep the stomach contents at a pH above 4.0. I personally vary the antacid to suit the patient's laxative needs.

I believe too much emphasis has been placed on the milk-alkali syndrome, for I have never seen a case in a young and otherwise healthy patient. If the patient is elderly and has metabolic, endocrine, kidney or other disease for which adjustments should be made, one of course should keep his handicaps in mind and should make adjustments to fit his particular problem.

Skin Color as a Guide to Systemic Disease

RICHARD M. CAPLAN, M.D.
Iowa City

OBSERVATION OF THE SKIN is usually the way that any physical examination begins. Even if our examination is of limited scope, as when a patient complains of an ear plugged with wax, we still encounter the skin always. In fact, as you must realize, observation of the skin is indeed the *very* first thing that happens when we encounter a patient, even before we say hello.

If we train ourselves specifically to notice it, we may find the skin telling much of importance about the patient. Certainly we will see many lesions or changes that have only cutaneous or cosmetic importance. But we may also find clues of great worth in evaluating a patient's medical status. Any experienced physician gains an immediate impression of his patient's age, the general quality of his health, the acuteness or chronicity of his illness, his racial background, his socio-economic status and possibly his occupation—all on the basis of an almost instantaneous recognition of signs that are largely cutaneous. This presentation is concerned specifically with the attribute of *skin color* as an aid in the diagnosis of systemic disease.

I shall confine myself entirely to lesions or changes that can be perceived only by noticing a color change—macular changes, then, which cannot be felt with the examining finger. Such abnormalities may involve either increases or decreases of either normal or abnormal pigments. The pigments responsible for *normal* skin color are mainly these: oxidized or reduced hemoglobin, carotene, bile pigments and melanin. Even these few substances, depending upon their relative amounts and distribution patterns, can produce an incredible array of visual effects in various disease states. My intention is not to offer a comprehensive list of possibilities, but by a few examples to demonstrate some of the many possible alterations that we may all encounter from time to time, and more especially to encourage you to focus your attention on what the skin can sometimes tell. Look closely at the skin. From it you may learn that something is very wrong with your patient, and perhaps may even learn *what* is wrong.

INCREASED AMOUNTS OF OXIDIZED HEMOGLOBIN

Twin-to-twin intra-uterine transfusion is a bizarre circumstance that permits us to notice the dramatic color effect of too much and too little blood.

The functioning carcinoid comes to notice especially by virtue of transient, but disconcerting, bright flush reactions.

The full Sturge-Weber syndrome (portwine

Dr. Caplan, an assistant professor of dermatology at the SUI College of Medicine, made this presentation at the annual meeting of the Iowa Medical Society, at Des Moines, in April, 1964. The Kodachrome slides that he used to illustrate his lecture haven't been reproduced here because of the great expense involved in multi-color printing.

mark of the face with intracranial hemangiomatosis capable of producing epilepsy and feeble mindedness) is not always present with the nevus flammeus, but a guarded prognosis is appropriate in a young child.

Localized erythema may be the only apparent finding in a patient with fever and malaise due to streptococcal cellulitis or erysipelas.

The telangiectasis is a special form of localized color in a dilated capillary cluster. It can suggest alcoholism, scleroderma, a strange form of inherited cerebellar ataxia, or Osler's disease (hereditary hemorrhagic telangiectasia), or simply may be the result of excessive sunlight damage on the face.

True arterial "spiders," with a pulsating central arteriole and numerous capillary "legs," can be entirely normal, or can be harbingers of pregnancy or liver disease.

Palmar erythema is another peculiar vascular change that may be associated with liver disease, pregnancy, ulcerative colitis, or collagen diseases (especially rheumatoid arthritis). Many times it is of no clinical significance.

A peculiar lavender or heliotrope hue can be noticed on the eyelids and central face of most patients who have dermatomyositis. A similar color occurs in acute trichinosis and porphyria cutanea tarda, but the other cutaneous manifestations of dermatomyositis are lacking.

DECREASES IN AMOUNTS OF OXIDIZED HEMOGLOBIN

The generalized pallor of significant anemia is easy to detect if we are used to being watchful. When blood supply is too seriously impaired, the area concerned then takes on the color of gangrene —black.

INCREASES IN AMOUNTS OF REDUCED OR ALTERED HEMOGLOBIN

Whether idiopathic or secondary to a variety of cardio-pulmonary disorders, polycythemia usually produces at least a suffused or "ruddy" appearance of the central face. As the amount of reduced hemoglobin increases further, the blue or cyanotic hue increases until we have the extreme example, the "blue-baby."

If the blood flow rate through an area is decreased because of a fall in local arterial pressure, or an impediment to venous outflow, then the longer contact time of capillary blood with the tissues will lead to a greater concentration of reduced hemoglobin and the part will seem more blue. This is often observed on the feet of many older people, and gives silent but emphatic evidence of decreased circulatory efficiency.

Perhaps the extreme circumstance of reduced flow rate occurs in frank purpura, when blood becomes extra-vascular in the dermis, and stays until gradually degraded and absorbed. The causes of purpura are many; some are trivial, others critical, but all deserve explanation.

Other examples of color changes related to non-oxygenated hemoglobin include the deep cherry-red color of the skin in carbon monoxide poisoning and the lavender color of methemoglobinemia (e.g., "Well-water cyanosis" or sulfone intoxication).

INCREASES IN THE AMOUNT OF CAROTENE

By far the most common cause of this phenomenon is the ingestion of large amounts of carotene, and this is almost "normal" in young babies who are fed lots of yellow vegetables. Because carotene is fat-soluble, there will usually be an excess of it in the blood of those patients who have increased serum lipid levels, as in myxedema, diabetes mellitus or hyperlipidemia of any type, and many times such patients will look a little yellow. This coloration may even simulate jaundice or anemia. Frank collections of fatty infiltrates, as in various xanthomatoses, are yellow in proportion to their carotene content.

INCREASES IN THE AMOUNT OF BILE PIGMENT

The yellow to yellow-green color of jaundice is familiar to us all. It is worth mentioning that elevations of serum bilirubin can at times be responsible for generalized pruritus and consequent excoriations, even before jaundice becomes clinically apparent. The depth of color or the amount of pruritus are not reliable indicators of the cause of the jaundice.

INCREASES IN THE AMOUNT OF MELANIN

The brown pigment, melanin, may accumulate in *localized* areas, as in the café-au-lait spots of neurofibromatosis. Patients with Peutz-Jeghers syndrome have pigmented spots on the buccal mucosa, lips and fingers, serving as a clear signal of the presence of small bowel polyposis. Pigmentation of nipples, areolae and linea alba may be the first sign of early pregnancy. Chloasma (patterned pigmentation of the face) may develop in pregnancy (or without pregnancy) and apparently may occur as an occasional complication of taking the new progestational contraceptive tablets.

Generalized darkening of the skin may have many causes. Especially famous is the hyperpigmentation of adrenal insufficiency, as in Addison's disease and chronic wasting diseases, brought on by the melanocyte stimulating effect of a hypersecreting pituitary gland. Neurofibromatosis, again, may produce much generalized "chocolate" color in addition to the café-au-lait spots. Widespread scleroderma may present as hyperpigmentation, even months before the skin grows firm and tight. Biochemical upsets of metal metabolism (iron in hemochromatosis, copper in Wilson's disease, zinc in porphyria cutanea tarda) have been implicated in disturbances of the normal tyrosine-tyrosinase system of melanin formation, with subsequent hyperpigmentation. The speckled, raindrops-on-a-dusty-road pigment pattern is essentially pathognomonic of arsenical intoxication. Late in the

course of metastatic melanoma, generalized darkening and melanuria may develop.

DECREASES IN THE AMOUNT OF MELANIN

Localized absence of pigment, vitiligo, is said to be associated, to more than the expected degree, with pernicious anemia and with Addison's disease. It is also a facet of the Vogt-Koyanagi syndrome, along with deafness and iritis.

Generalized decrease of pigment is naturally at its extreme in albinism, in which ocular disturbances may be disabling. Patients with pituitary failure grow pale, for a reason opposite that which causes darkening in Addison's disease. Because of the metabolic block in the pathway of phenylalanine metabolism (to tyrosine to melanin), children with phenylketonuria manufacture rather little melanin, and therefore are usually quite fair and blue-eyed.

PRESENCE OF ABNORMAL PIGMENT

Many different abnormal materials and circumstances may produce unique pigmentary effects. Argyria, with the dirty blue-grey color of silver in the skin, is famous though rare. Circulating ions of lead or bismuth will precipitate as the black sulfide along the gingival margins where food is decaying—an extremely valuable sign in plumbism. Deposition of homogentisic acid in cartilaginous structures accounts for the grey color of the ears and nose in ochronosis, and can provide a quick explanation for the associated dark urine and arthritic complaints. The yellowish color of dermal elastotic degeneration helps make recognizable the cutaneous lesions of pseudo-xanthoma elasticum, a disease with important manifestations in the eyes, gastrointestinal tract and vascular tree. Even the "cosmetic" tattoo can be of much service in the psychological evaluation of a given patient.

CONCLUSION

I hope that these illustrations have given you some idea of the many kinds of diagnostic inferences available from noticing just the *color* of the skin. And if you *also* take similar thoughtful notice of other cutaneous changes, then the number of inferences will be multiplied.

Management of Common Forearm Fractures in Children

REGINALD R. COOPER, M.D.
Iowa City

FRACTURES OF THE FOREARM constitute one of the most frequent groups of children's fractures. In contrast to forearm injuries in adults, those in children are usually produced by simple mechanisms, their management is less complex, and the results are, for the most part, predictable and gratifying, if a few basic principles are rigidly ap-applied.

Except for the relatively few such fractures that have been produced by automobile and farm-machinery accidents, they have resulted from an indirect application of force to the forearm during a fall on an outstretched hand. Ordinarily, this has occurred as the child attempted to cushion himself during a tumble from steps, a swing, a pony, etc.

About 75 per cent of forearm fractures in children are in the distal one-third, and 15 per cent are in the middle one-third. Unlike the infinite variety of fractures of the radius and ulna in adults, those in children can be categorized somewhat by age groups.

Dr. Cooper is an associate in the Department of Orthopedic Surgery at the S.U.I. College of Medicine.

COMMON FOREARM FRACTURES CATEGORIZED BY AGE GROUPS

	Distal One-Third
1. Age 1-6 years	"Greenstick" fractures
	A. Non-displaced
	B. Angulated, with the apex in a volar direction
2. Age 6-10 years	Fracture with complete displacement
3. Age 8-14 years	Separation of distal radial epiphyses
	Middle One-Third
1. Age 1-6 years	"Greenstick" fractures
	A. Non-displaced
	B. Angulated, with the apex in a volar direction
2. Age 6-14 years	Fracture with complete displacement

These are not rigid groupings, for any type of fracture may occur in a child of any age.

On the basis of a history of injury, the diagnosis can be suspected in a child who complains of pain and loss of function. Examination will reveal point tenderness, and if the fragments have been displaced, deformity will be present. It is mandatory that the neurovascular status of the extremity distal to the fracture be observed, and the findings recorded. Roentgenograms must be used to confirm the diagnosis. At least two views in planes at right angles to each other are necessary (AP and lateral views). One may need comparable views of the opposite forearm in order to make

an exact diagnosis, especially in instances of "greenstick" fractures and epiphyseal injuries. By comparing the two sets, one can avoid a misdiagnosis in infants whose bone ends are still composed largely of unmineralized cartilage that fails to cast a dense image on the x-ray plate. Such views may also prevent mislabeling as fractures such variants as epiphyseal lines, growth-arrest lines, nutrient canals, congenital defects and accessory centers of ossification.

The goals in the treatment of forearm fractures are rapid union in a satisfactory position, and restoration of function to the involved part. These must be accomplished by the method that involves least risk to the patient.

The principles of treatment are as simple as the mechanisms of injury that have produced the fractures. These fundamentals, rigidly applied, plus the amazing healing powers of the child, should produce excellent results in nearly all instances. On the other hand, the neglect of these principles can be catastrophic.

"GREENSTICK" FRACTURES OF THE DISTAL THIRD

A. *Non-displaced.* These fractures are common in children under the age of six, and many of them present with so little in the way of pain and functional loss that the diagnosis is uncertain. These "wrinkles" in the cortex of the bone (Figures 1A and B) may even be overlooked on the initial radiographs, if comparable views of the opposite side are unavailable for comparison. Within five to seven days after the injury, absorption at the fracture site will render them more obvious (Figures 1C and D). Even though many of them can remain undetected and can heal without therapy, treatment will relieve discomfort and eliminate the chance of displacement of fragments during subsequent falls.

No reduction is necessary in these undisplaced fractures, and they can be managed satisfactorily by the application of a long arm plaster cast for two or three weeks (Figures 1E and F). At the end of that time, the child may be left to his own devices in regaining function of the extremity. No physical therapy is necessary. If left with discomfort as the sole limitation on his activity, the child will initiate the correct amount of motion at the proper time.

B. *Angulated.* In this type of fracture, there are various degrees of angulation. The apex of the angle is usually in a volar direction (Figures 2A and B) because of the mechanism of the fracture—a fall on an out-stretched hand. Rarely, the child has fallen on the back of his hand, and the apex of the angle is in a dorsal direction.

There is little loss of apposition, and there is no rotatory malalignment or length discrepancy in this injury. All that remains to be corrected is the angulation, and an attempt must be made to correct it. If anatomic reduction cannot be attained, residual angulation is permissible provided (1) that the child is under age 10 (female) or 12 (male); (2) that the angulation has its apex toward the flexor surface; and (3) that the amount of angulation is not excessive. The younger the child, the greater the amount of angulation that may be accepted, but in no case should more than 20 degrees remain. If the residual angulation is moderate, one can be confident in nearly all instances that remodeling will correct it as the child grows. The parents must be reassured that the arm will straighten.

If the angulation must be corrected, the pain must first be relieved. In older, cooperative children, this can be done by infiltrating the fracture hematoma with a local anesthetic. A few words of warning must be issued regarding this procedure: 1. One is converting a closed fracture into an open one, and is assuming the inherent risks of infection. Thus, the procedure must be done under strict asepsis in order to avoid disaster. 2. Unless the tip of the needle is in the fracture hematoma, as evidenced by the aspiration of blood, the anesthesia will be inadequate. 3. If both radius and ulna have been broken, each hematoma must be infiltrated.

If a general anesthesia is to be given, one must remember that children are constantly eating, and that time must be allowed to elapse in order to minimize the danger of aspiration.

Angulation can easily be corrected by manipulation. While the physician uses his thumbs as a fulcrum beneath the apex of the angle, a long arm cast is applied (Figures 2C and D). In fractures of the distal one-third of the forearm, it is usually advisable to apply the cast with the forearm in a pronated position, as a means of preventing reangulation. The cast must be well molded to the oval contour of the forearm. The application of a round cast is incorrect, for the efficiency of the plaster as a fixation device is markedly decreased.

Post-reduction roentgenograms are obtained, and the area is then elevated for 24 to 48 hours. Finger motion is encouraged, and the hand is observed carefully for signs of circulatory embarrassment that might necessitate bivalving the plaster. Follow-up x-rays must be obtained at about five days and ten days. During this time, when edema is subsiding, loss of reduction is most likely. The earlier such loss is detected, the easier it is to correct. Immobilization is continued for five or six weeks. The forearm is then examined, and if clinical and roentgenographic union is present (Figures 2E and F), the child is left to his own devices in regaining function of the extremity.

DISPLACED FRACTURES OF THE DISTAL ONE-THIRD

In displaced fractures of the distal one-third, there is loss of end-to-end apposition, and there are varying degrees of malalignment, both rotatory and angulatory (Figures 3A and B).

It is important to examine and record the neurologic and circulatory status of the hand. After

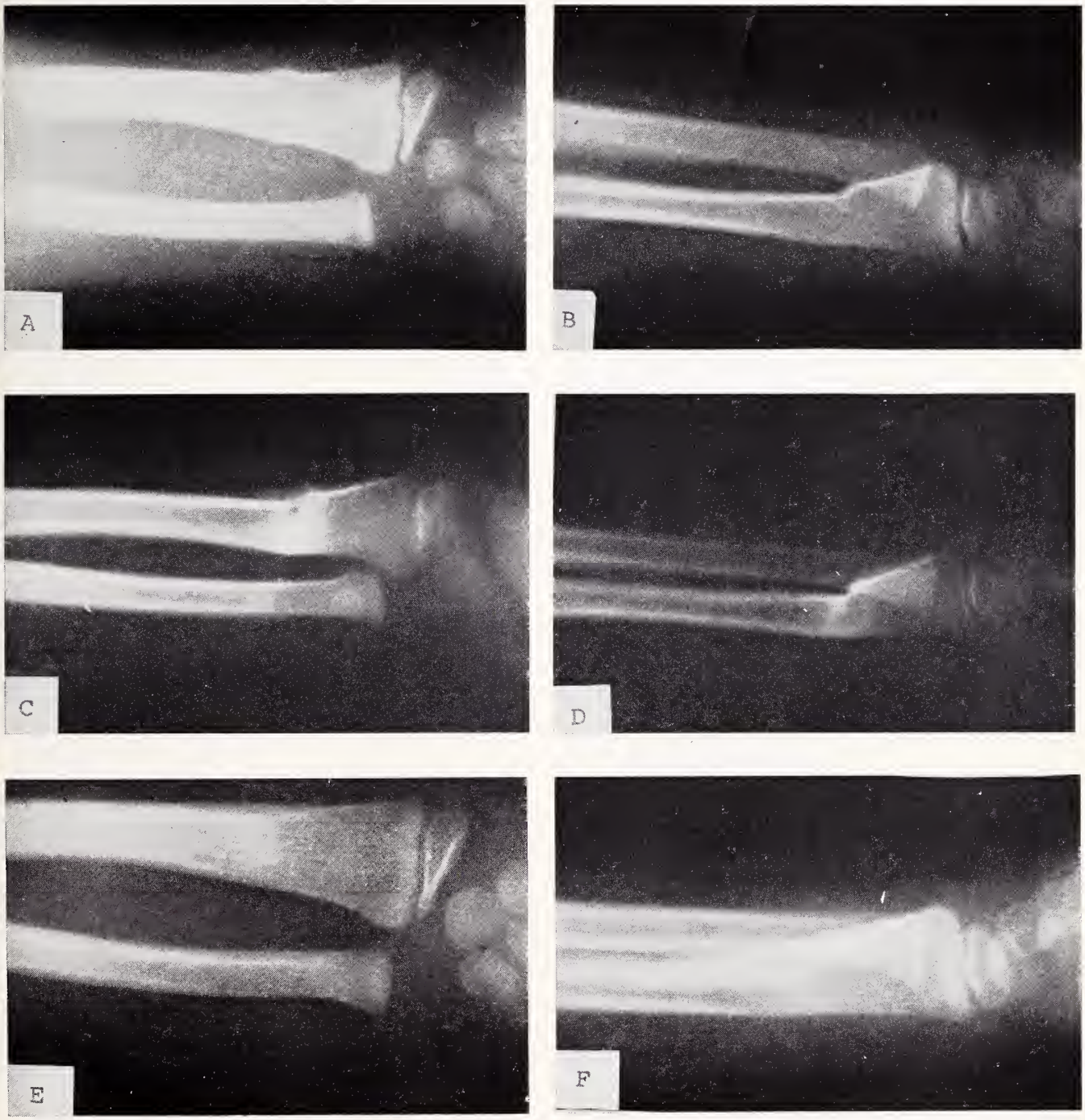


Figure 1. A. AP view of "greenstick" fracture of distal one-third of forearm. B. Lateral view showing angulation with the apex in a volar direction. C. AP view after three weeks of treatment in a long arm cast. Absorption and repair at the fracture site have made it more obvious. D. Lateral view at three weeks. E. AP view four months after fracture, showing restoration of normal architecture. F. Lateral view at four months.

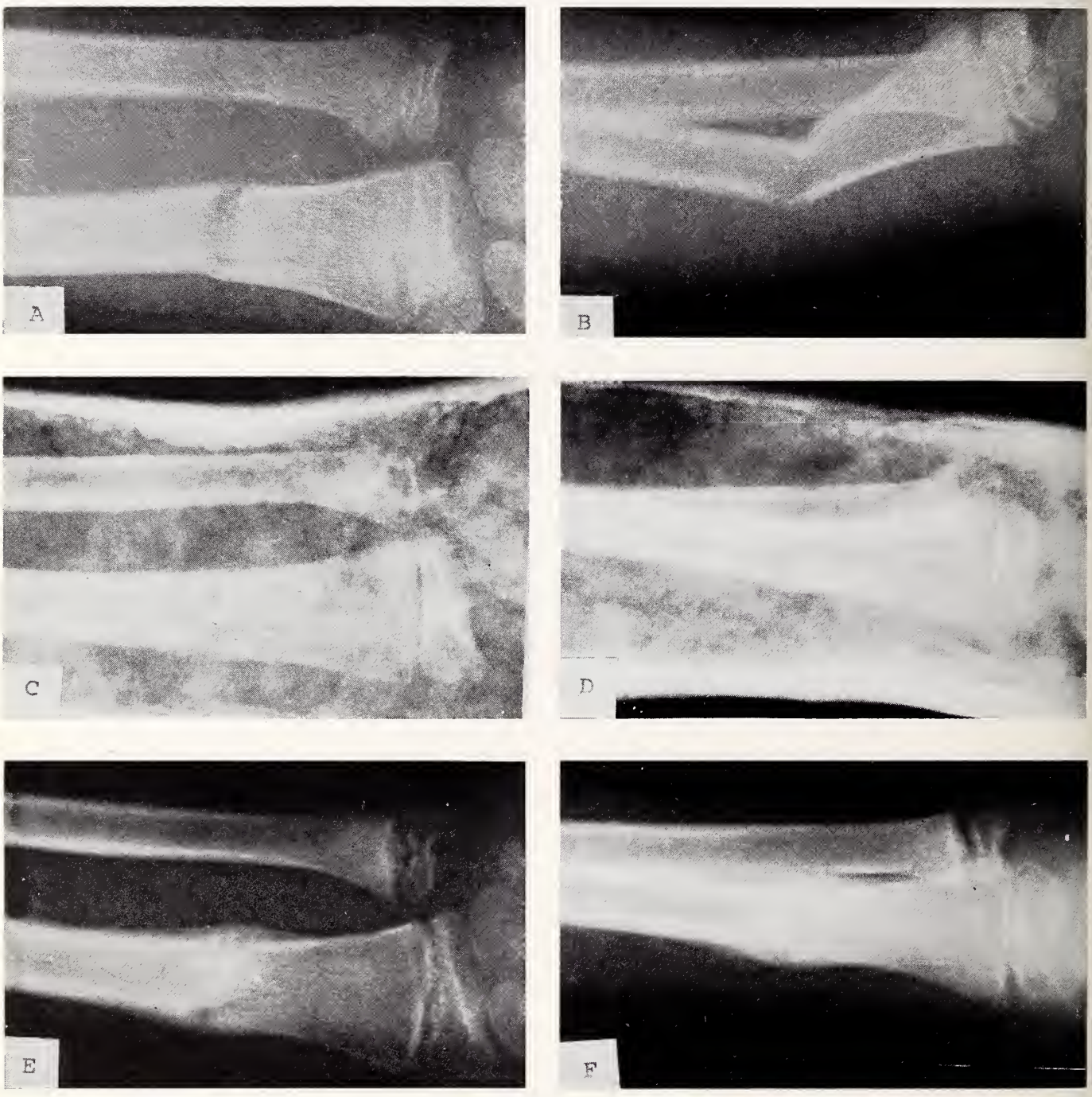


Figure 2. A. AP view of "greenstick" fracture, angulated with the apex in a volar direction. B. Lateral view. C. AP view after reduction and application of plaster. D. Lateral view. E. AP view six weeks later, showing firm union in anatomic position. F. Lateral view.

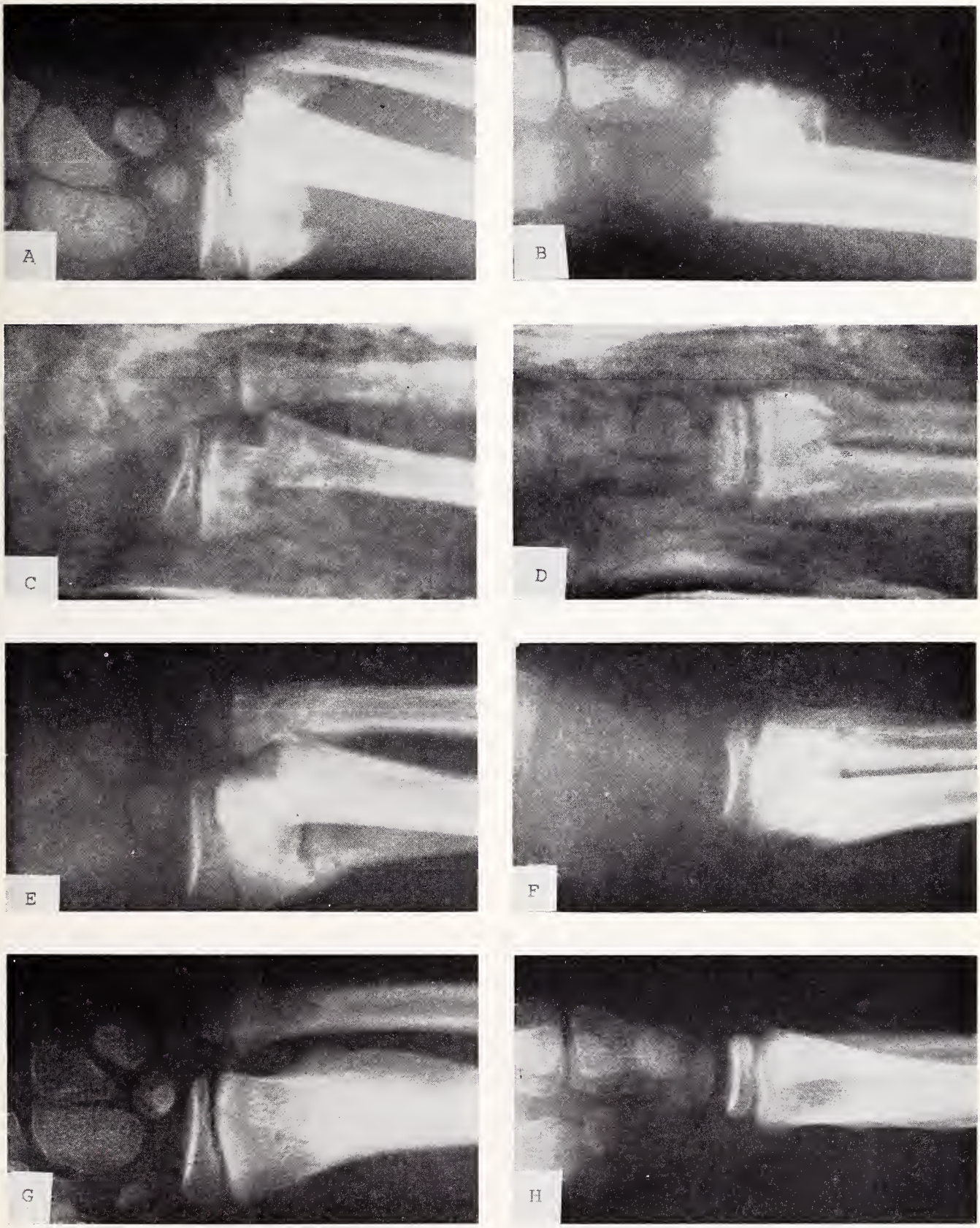


Figure 3. A. AP view of displaced fracture of distal one-third of forearm, showing displacement, loss of length, and angulation. B. Lateral view. C. AP view after reduction, showing that length has been restored and angulation has been corrected, but that there is a 50 per cent loss of end-to-end apposition. This is perfectly acceptable, provided that malrotation and angulation have been corrected. D. Lateral view. E. AP view four weeks later, showing firm union of the fragments by periosteal new bone. F. Lateral view. G. AP view six months later, showing how the loss of apposition is being corrected by absorption of bone on the medial side and deposition of bone on the lateral side, thereby restoring normal architecture to the radius. H. Lateral view.

that has been done, adequate anesthesia, either local or general, must be secured. A manipulative reduction is then attempted, The most important factors to correct are the rotatory and angulatory malalignments. Residual malrotation must be corrected, for it will not improve as the child grows, and will serve to restrict pronation and supination. Angulation must be reduced to an acceptable degree. Malalignment can be corrected through the application of traction to the hand and fingers, with counter traction on the humerus. Attempts to "hook" the fragments together by manipulation are usually successful. If so, end-to-end apposition is restored, and loss of length is corrected (Figures 3C and D). An inability to "hook" the bone ends IS NOT an indication for open reduction. In this location, side-to-side (bayonet) apposition with up to 1 cm. of overriding is acceptable. This can be obtained by manipulation and application of a cast, or by "banjo traction," consisting of longitudinal skin tapes from the fingers connected by rubber bands to a wire outrigger built into a long arm cast. Remodeling will eventually restore normal architecture as the child grows (Figures 3E, F, G and H). The same post-reduction routine as that used in augulated fractures is instituted.

SEPARATION OF DISTAL RADIAL EPIPHYSIS

Separation of the distal radial epiphysis is produced by a fall on the outstretched hand. The fracture line is at the junction of the bone and the epiphyseal plate (Figures 4A and B). The growing cartilage cells of the plate and a triangular fragment of the metaphyseal bone remain with the dorsally displaced epiphysis. Most of these injuries are produced by a shearing force, and there isn't much damage to the epiphyseal plate cells. Growth, therefore, isn't disturbed. If there has been a compressive force in addition to the shearing force, some of the epiphyseal plate cells may have been crushed. Length discrepancies and deformity may then result, because of unequal growth in various areas of the plate. The parents of a child with an epiphyseal plate injury must be warned of the possibility of delayed deformity.

In the management of these injuries, proper anesthesia is mandatory in order that a manipulative reduction can be obtained on the first attempt, and that further damage to epiphyseal cells can be minimized. After reduction, the extremity is immobilized in a long arm plaster for about six weeks. The post-reduction routine is similar to that for displaced fractures of the distal one-third of the forearm. Follow-up x-rays must be obtained as the child grows, if one is to detect deformity at the earliest possible time (Figures 4C and D).

If a displaced distal radial epiphysis is not seen by the physician until 10 or 12 days after the injury, healing will have fixed the epiphysis in its displaced position (Figures 5A and B). In such a case, manipulative reduction will be impossible. Open reduction IS NOT indicated, however, for it would greatly increase the risk of damage to the epiphyseal cells. Treatment in these cases should consist of the application of a cast for another three weeks, to protect the area. Remodeling with growth will correct alarming amounts of displacement (Figures 5C and D). The end result is influenced less by the adequacy of reduction than by the amount of epiphyseal-plate damage that was done at the time of initial injury. In the rare case where severe deformity remains, it can be dealt with surgically after the child's growth has been completed.

FRACTURE OF THE MIDDLE ONE-THIRD OF THE FOREARM

In the younger age groups, fractures of the middle third of the forearm are commonly "greenstick." There may be no angulation (Figures 6A and B), and in that case, treatment consists of plaster immobilization for four to five weeks.

Angulation may be present, with the apex toward the flexor surface (Figures 7A and B). The dorsal periosteum remains intact, and unless it has been broken, it may act as a "spring" to cause loss of reduction. The treatment, therefore, consists of manipulation to correct the angulation and to snap the dorsal periosteum. This can be done by one quick maneuver wherein the physician uses his thumbs as a fulcrum at the apex of the angle and applies force until an audible snap is produced. Many times anesthesia is unnecessary. A long arm cast is applied (Figures 7C and D), and the same routine is instituted as for fractures of the distal one-third of the forearm. Union should be firm in five to six weeks (Figures 7E and F).

In older children, fractures in the middle one-third of the forearm may displace completely. Malalignment, both rotatory and angulatory, must be corrected. Inability to "hook" the fragments in end-to-end apposition IS NOT an indication for open reduction. Bayonet apposition with 1 cm. of overriding is acceptable, and can be obtained either by manipulation and the application of a cast or by skin traction on the fingers. Residual angulation is not permissible at midshaft level, in contrast to the distal one-third of the forearm.

SUMMARY

In summary: (1) Fractures of the forearm in children are usually due to simple injuries. (2) The types of fractures are well known, and the results of treatment are predictable if a few fundamentals are rigidly applied. (3) For a proper diagnosis, one must obtain roentgenograms in at least two planes, and in many instances he should get comparable views of the opposite side. (4) Rotatory and angulatory malalignment must be corrected. (5) Methods of treatment consist of

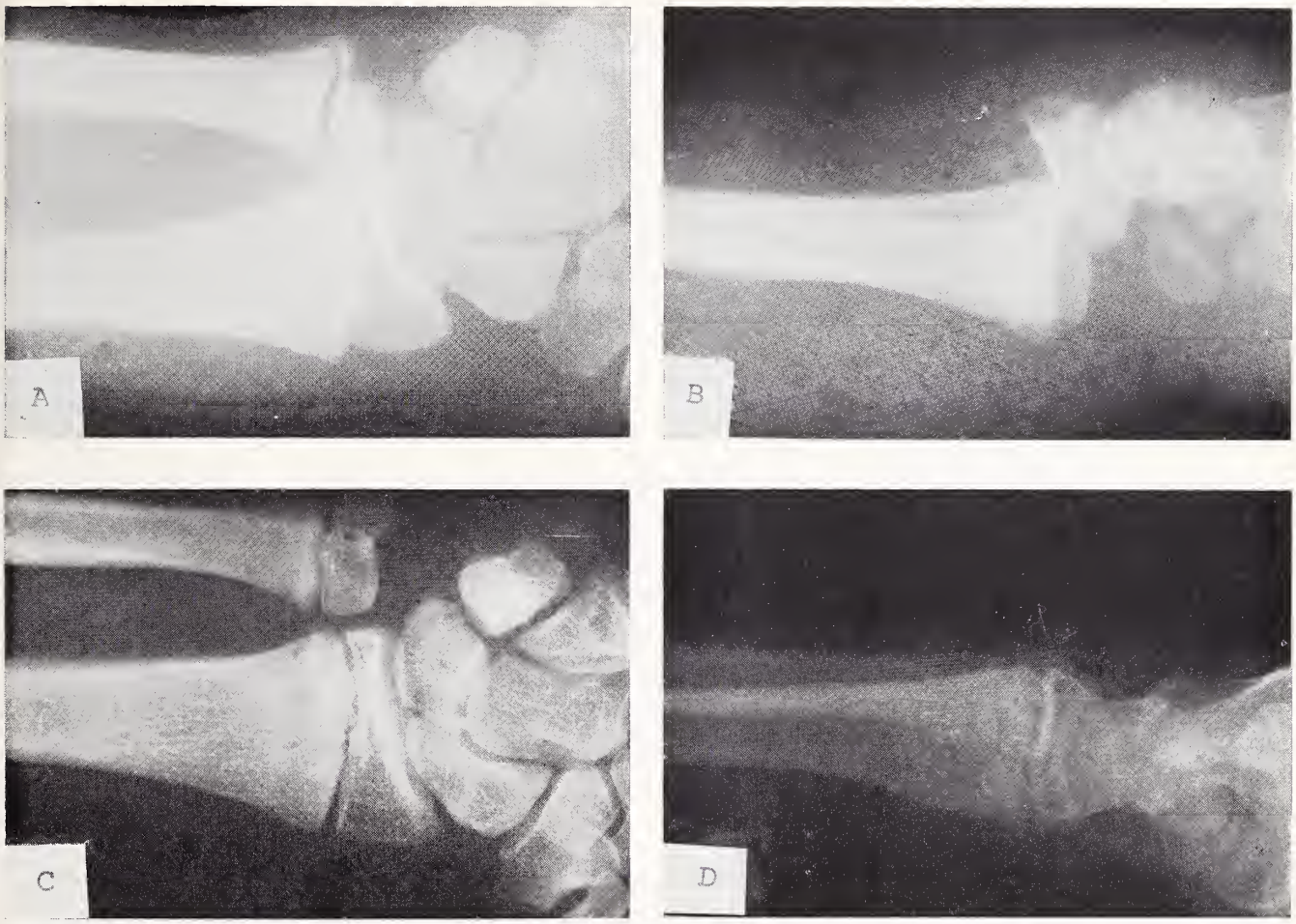


Figure 4. A. AP view of displaced distal radial and ulnar epiphyses. This might be read as normal by a casual observer who failed to obtain a lateral view or comparable views of the opposite side. B. Lateral view, showing the obvious dorsal displacement of the distal epiphyses. Note that a small triangular fragment of the metaphyseal bone remains with the displaced epiphysis. C. AP view 11 months after reduction and immobilization for six weeks in a long arm plaster cast. The epiphysis is in normal position, and no growth disturbance is detectable. D. Lateral view.

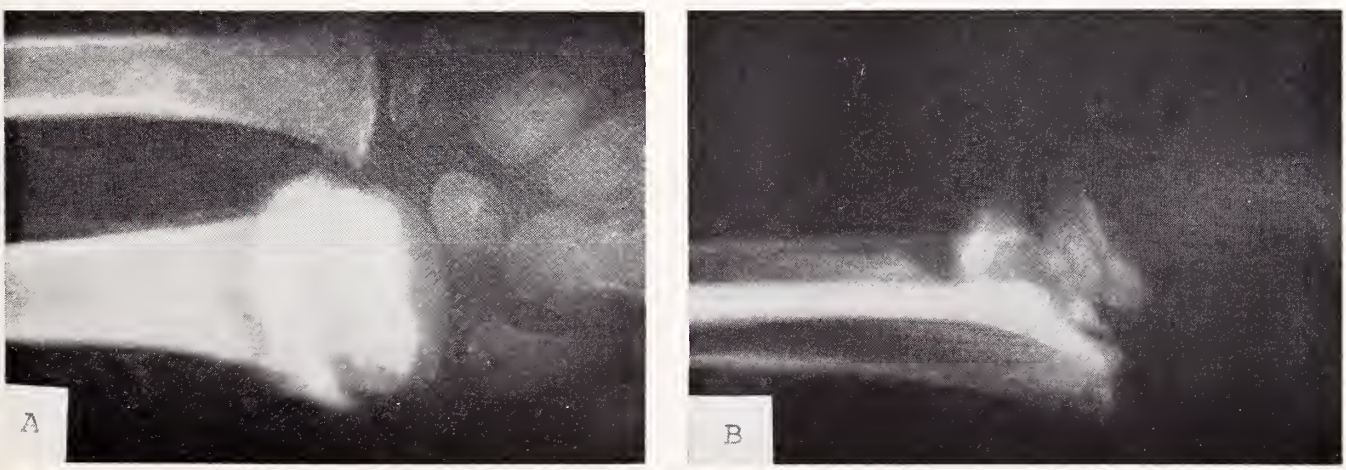


Figure 5. A. AP view of a displaced distal radial epiphysis seen four weeks after injury. By that time, healing had fixed the epiphysis in this position, and reduction would have been impossible. No treatment was instituted. B. Lateral view, showing marked dorsal displacement of the distal radial epiphysis. There is also some angulation.

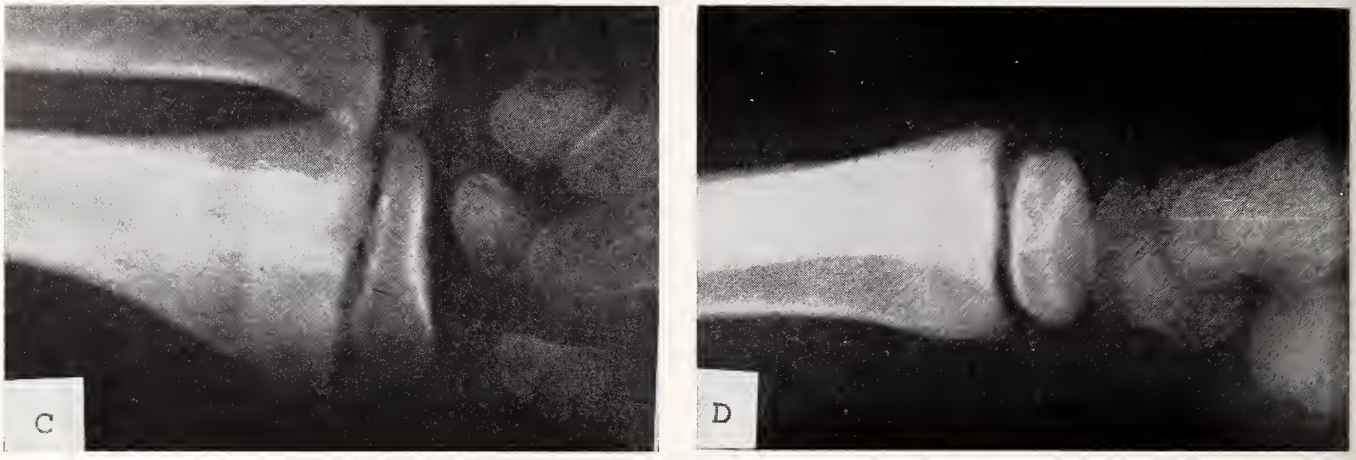


Figure 5. C. AP view 11 months later, showing how the rather alarming amount of displacement has been corrected by remodeling. D. Lateral view, showing the correction of the dorsal displacement and angulation. Further remodeling, along with growth, will restore normal architecture.

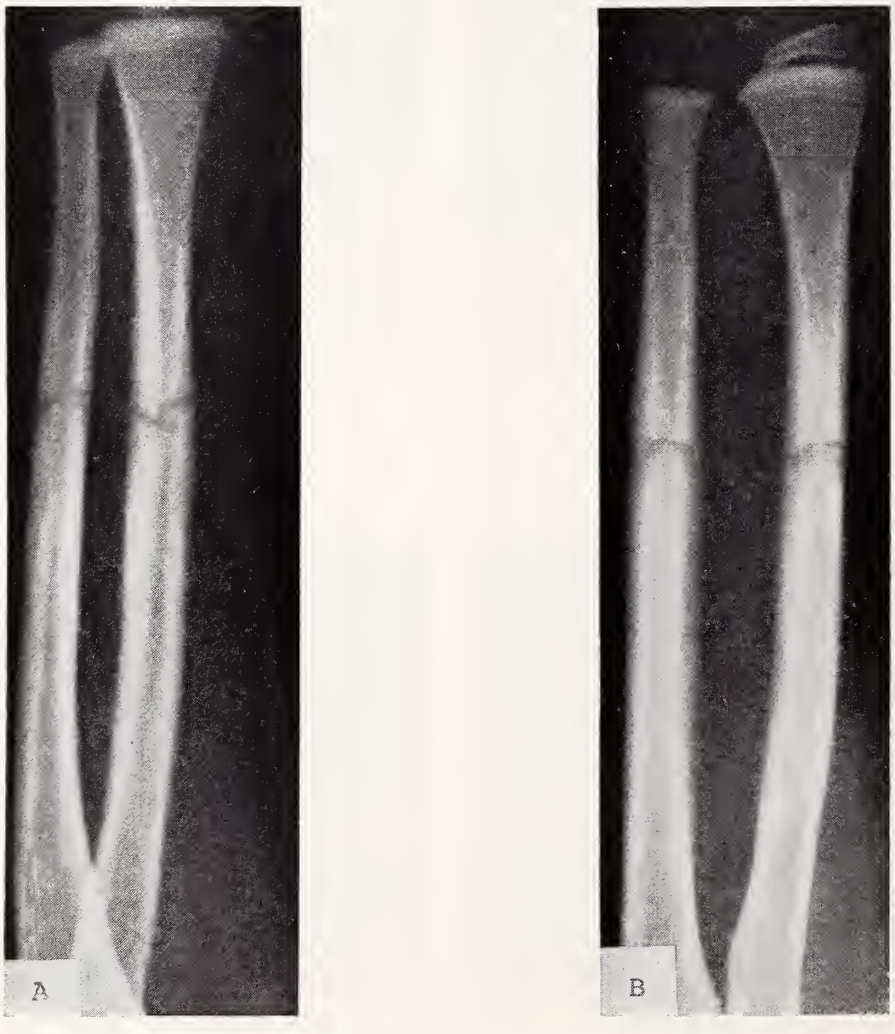


Figure 6. A. AP view of undisplaced "greenstick" fracture of middle third of forearm. B. AP view five weeks later, showing periosteal new bone uniting the fragments.

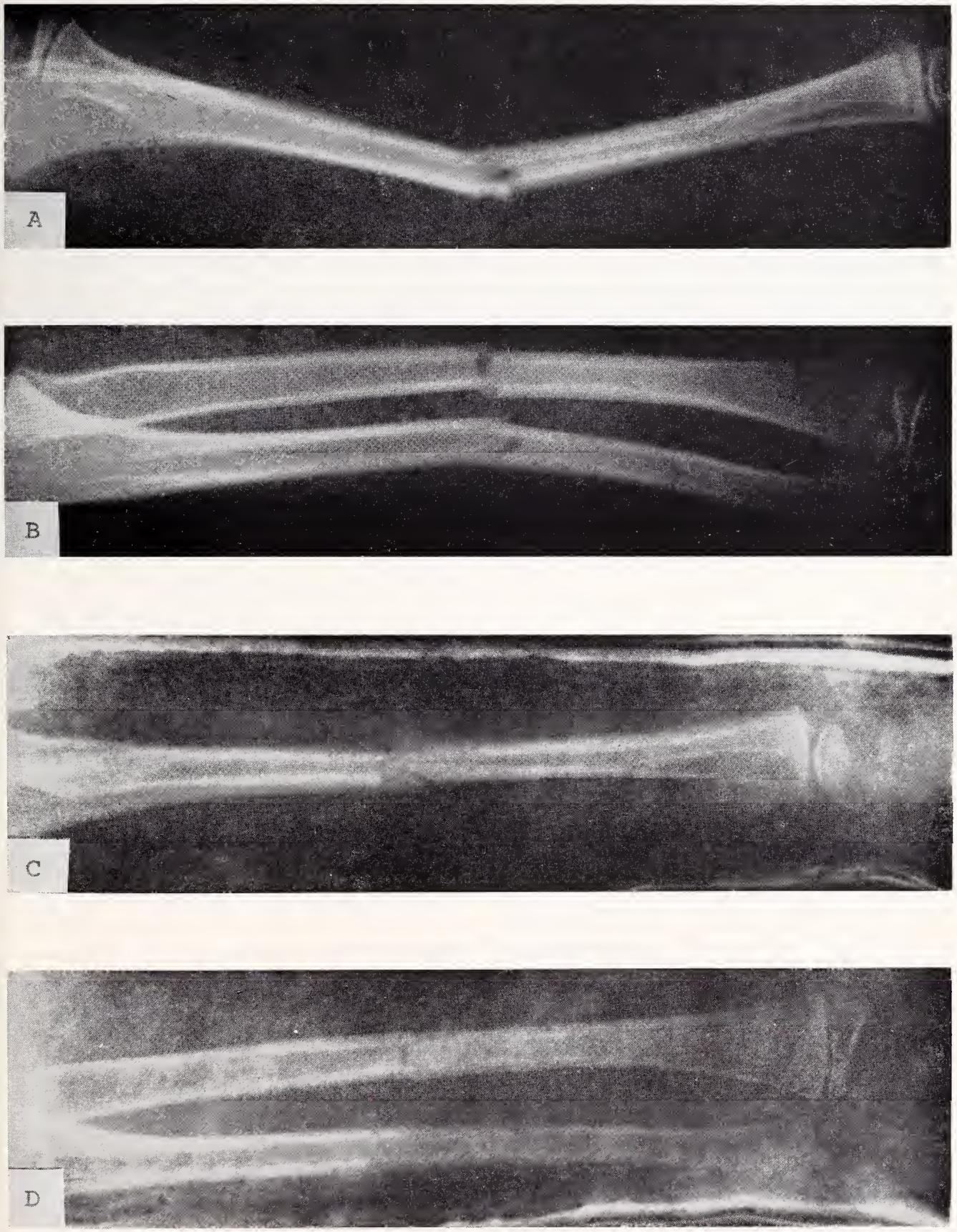


Figure 7. A. Lateral view, showing "greenstick" fracture of middle third of forearm, with angulation apex toward the volar surface. B. AP view. C. Lateral view after snapping the dorsal periosteum and correcting angulation. D. AP view.

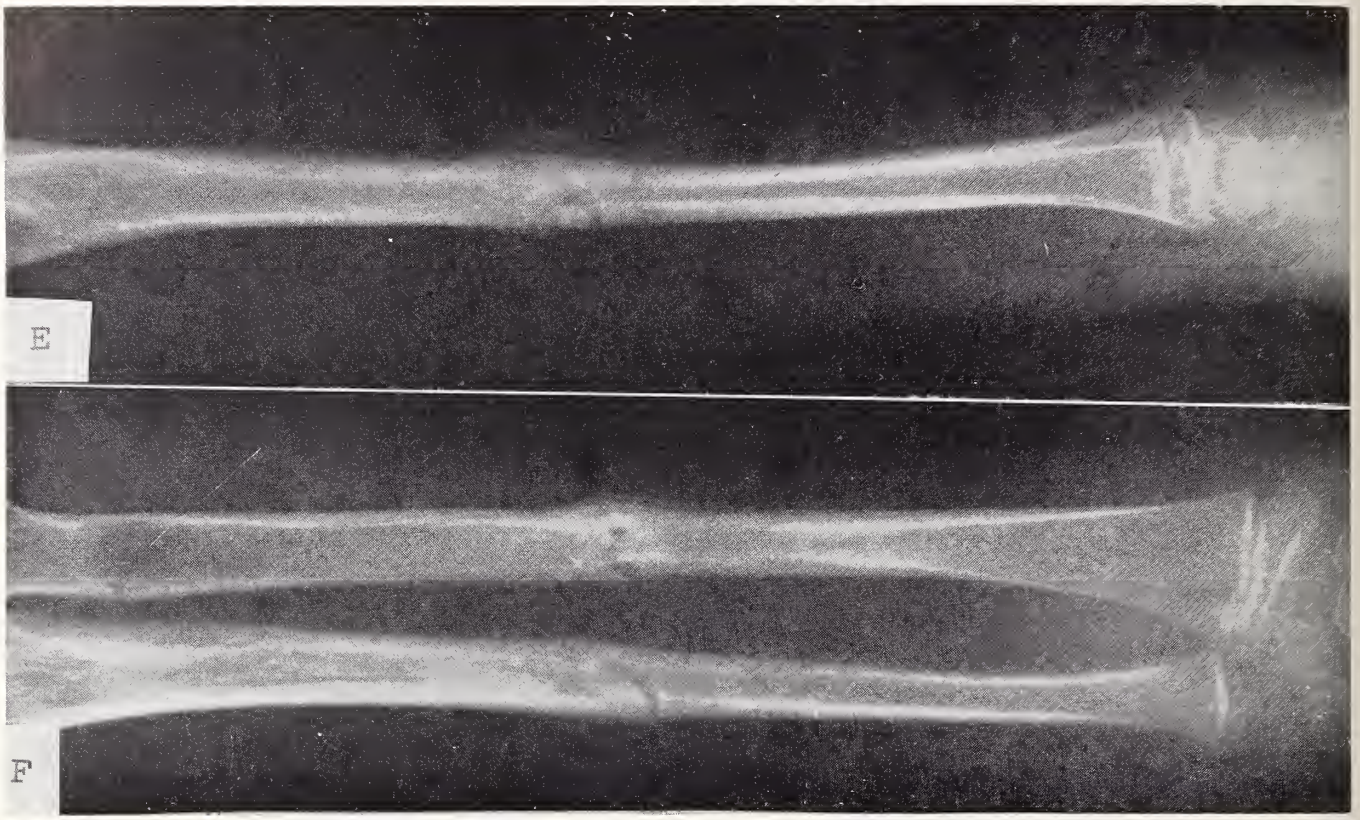


Figure 7. E. Lateral view five weeks later, showing periosteal new bone uniting the fragments. F. AP view.

manipulation and application of a cast, or skin traction. (6) After the fracture has united, no physical therapy is necessary in a child. (7) As the child grows, epiphyseal injuries must be followed closely if one is to detect abnormalties resulting from damage to the epiphyseal cells. (8) Open reduction IS NOT indicated, and must be classified as unwarranted molestation.

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Hyperbaric Oxygenation

For many years we have deemphasized peritonitis due to gas-forming organisms in our country, for reported cases have appeared sporadically and results of therapy have been disappointing.

The recent advent of hyperbaric oxygenation as a therapeutic approach in medicine has reawakened interest in anaerobic infections of this kind. We now recognize that, for the first time in history, we have an ideal form of therapy which can be applied readily in the treatment of infections due to Clostridium welchii. Drenching the body with oxygen quickly suppresses growth of these anaerobic organisms, and patients improve clinically within a matter of hours. Interestingly, more cases of this type are now coming to light in most communities in the United States, and infections of this type appear to be more prevalent than we had supposed.

Experience with hyperbaric chambers in Amsterdam and Glasgow has demonstrated immediate improvement in critically ill patients, with an improved state of well-being and freedom from fever within 24 hours after initial therapy. Customarily, patients have been subjected to three atmospheres of abnormal pressure, and have breathed 100 per cent oxygen through special-fitting masks. Therapy has been conducted for two hours, and repeated twice daily for several days.

—CLAUDE R. HITCHCOCK, M.D., Ph.D.

In MINNESOTA MEDICINE, November, 1964

Cancer in Ulcerative Colitis

Report of 27 Consecutive Colectomies

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CHRONIC ULCERATIVE COLITIS is a premalignant disease; cancer of the colon occurs as a fulminating complication. The incidence of cancer is much higher in ulcerative colitis patients than in the "ordinary" patients with no history of chronic colonic disorders.[1] The longer the duration of chronic ulcerative colitis, the more frequently cancer of the colon occurs in such patients.[2]

We report eight cases of cancer of the colon from among 164 patients with chronic ulcerative colitis. The diagnosis of colon cancer was made by the histologic examination of 27 consecutive colectomy specimens. The associated clinical histories of these patients will be tabulated and discussed.

MATERIAL

From 1947 through 1963, a 17-year period, 164 patients diagnosed as chronic ulcerative colitis had 233 admissions to Iowa Methodist Hospital, in Des Moines. Twenty-seven of the 164 patients underwent colectomy. Eight of these (30 per cent of the 27 colectomy patients) had grade II to grade IV adenocarcinoma of the colon. No cancers of this sort had been recorded at Iowa Methodist in the years 1947 through 1956; all eight cancers had been diagnosed during the seven most recent years, from 1957 through 1963.

FINDINGS

1. *Colectomy specimens with cancer:* Simultaneous chronic ulcerative colitis and adenocarcinoma were found in six of the colectomy specimens. A seventh specimen showed no residual colitis, but had a perforating adenocarcinoma extending from the sigmoid colon into the urinary bladder. The patient had the usual clinical history and sigmoidoscopic findings, but had been on steroids intermittently for almost seven years. The eighth patient had had chronic ulcerative colitis for 30 years. His colectomy specimen initially appeared free of cancer, but three months later his autopsy revealed metastatic adenocarcinoma of the colon. The sex distribution was equal, with four men and four women having cancer of the colon. Only three patients had a correct preoperative diagnosis of cancer of the colon. Of the remainder, three had undergone colectomy for obstruction, one for hemorrhage, and one for a sigmoid-bladder fistula.

2. *Colectomy specimens without cancer:* Of the 19 colectomy specimens that were cancer-free, 18 had varying degrees of ulcerative activity. The nineteenth patient had a well healed colon with no evidence of residual ulcerative colitis. This group of specimens came from six men and 13 women. In these patients the most frequent surgical indication for colectomy was intractable ulcerative colitis.

3. *Colectomy specimens compared:* Table 1 shows that the patients with chronic ulcerative colitis who developed cancer had contracted colitis at an earlier age and had had their disease longer than the patients who were cancer-free at the time of colectomy. Bargen[2] states that patients who have had chronic ulcerative colitis for more than 10 years run a 17 per cent chance of developing cancer of the colon. Table 2 compares our expefemale who had a history of chronic ulcerative rience with similar series of patients, and with the composite study of Slaney and Brooke.[12]

TABLE 1

COMPARISON OF AGE AND DURATION OF DISEASE AMONG 27 CONSECUTIVE COLECTOMY PATIENTS WITH CHRONIC ULCERATIVE COLITIS

	Carcinoma Free	Carcinoma
1. Number of patients	19	8
2. Mean age of onset of disease	31	27
3. Mean duration of disease in years	5	12
4. Mean age at colectomy	36	44

TABLE 2

SUMMARY OF VARIOUS REPORTS

	Patients	Carcinoma	Per Cent	Mean Age	Mean Duration
1. Bruce and Cole	118	3	2.5	—	12
2. Scheeres	164	8	4.9	44	12
3. Bank	245	9	3.7	—	12
4. Slaney and Brooke (27 series)	9,469	358	3.8	41	13.9

4. *Colectomy specimen not obtained but cancer present:* A ninth case of chronic ulcerative colitis with cancer was found in our group of patients, but was not included in our statistics since a colectomy specimen was not obtained and the diagnosis was not established. This case was a 29-year-old white colitis for eight years, with frequent relapses. When she was seen at our hospital, she had an acute exacerbation of her symptoms and a suggestion of early intestinal obstruction. Her liver extended five finger-breadths below the right costal margin, and it revealed metastatic, grade IV adenocarcinoma on open biopsy. One month later she died in her hometown, in Missouri. No autopsy was obtained.

5. *Multicentricity:* Cancer of the colon in chronic ulcerative colitis is markedly different from cancer of the colon in patients with no past history of colonic disorders. In our series, three cases were multicentric in origin. A 30-year-old female who had had her disease for 13 years, had six separate sites of adenocarcinoma in her colectomy specimen. These were scattered from her cecum to her sigmoid, and varied from annular constricting lesions to ulcerating infiltrations (Figures 4 and 5). Bargen[2] reports an incidence of 24.2 per cent multicentricity among 178 patients with cancer in chronic ulcerative colitis. This is almost three times greater than Cole's[5] incidence of 8 per cent multicentricity in regular colon cancer.



Figure 1. The cecum of a 42-year-old white male with diffuse colonic-wall involvement by nonspecific chronic ulcerative colitis. (×75)

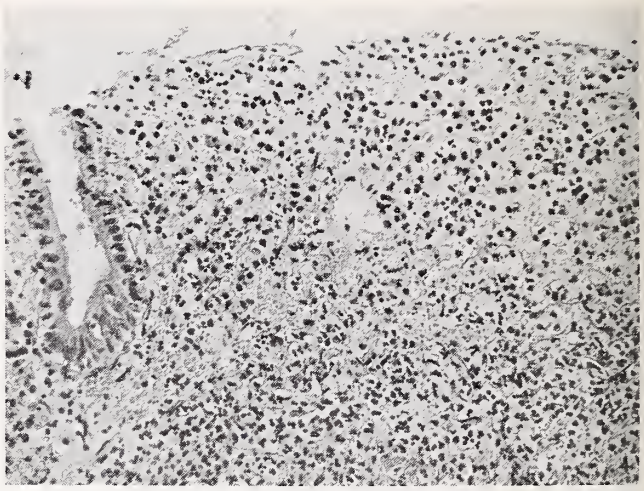


Figure 2. A high-power view of the same area, with the mucosa edge showing intense inflammatory infiltration and ulceration. Nearly all the epithelium has been destroyed by the necrotizing process. (×300)

6. *Postoperative follow-up:* Five of the eight colon-cancer patients died between one and six months after surgery. A sixth patient is alive 10 months post-colectomy, but had extensive metastasis. Two patients moved elsewhere after one year. One was in good health at that time, with no evidence of recurrence despite nodal metastasis at the time of his surgery. The other patient had recurrent bladder metastasis by the time she moved. She subsequently died, two years and three months after colectomy.

7. *Steroid treatment:* Nine of our 27 colectomy patients were treated with steroids. Four of these developed acute perforation, fistula formation, or hemorrhage of shock proportions. Another four developed cancer. Only one out of the nine patients treated with steroids was free of complications by the time he had his colectomy. Of the 18 remaining patients who were not treated with cortisone, four developed cancer. Other complications such as acute perforation or hemorrhage of shock proportions did not occur in this group of patients.

DISCUSSION

Cancer of the colon occurs 20 years earlier in patients with chronic ulcerative colitis than in patients who have had no past history of chronic colonic disorders. Slaney and Brooke's statistics[12] show a mean age of 41.1 years for the former group, versus a mean age of 63.2 years for the latter group. Their five-year survival rate for patients with cancer in chronic ulcerative colitis is only 18.6 per cent. Gilbertsen[6] reports a 52 per cent five-year survival rate for "ordinary" cancer of the colon resected for a cure. A comparison of the two reveals a threefold decrease in the five-year survival rate for patients with cancer in

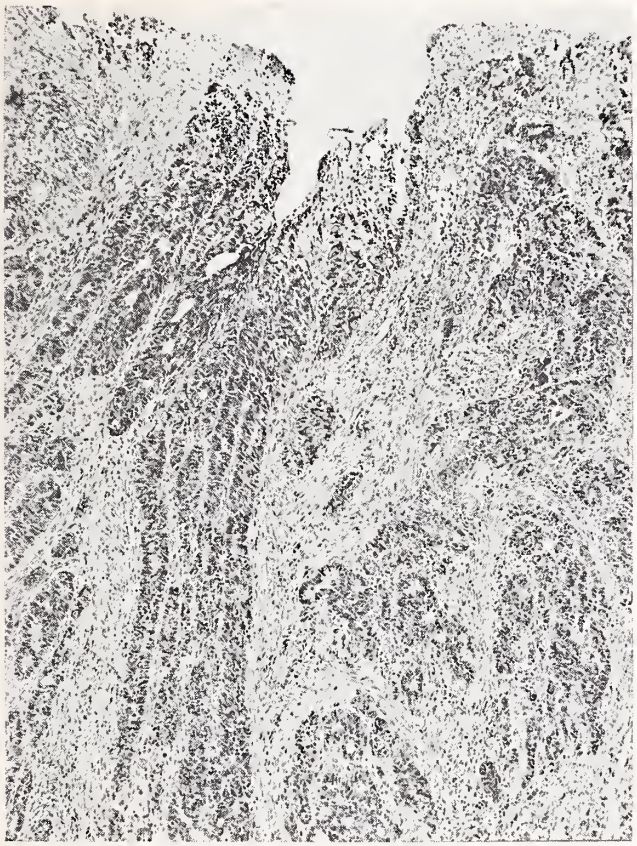


Figure 3. The same colon, showing an area of grade III adenocarcinoma with an ulcerative surface. Note the neoplastic spread into the submucosa. This patient had three separate sites of cancer. (×135)

chronic ulcerative colitis. Delayed detection increases the incidence of nodal metastasis and makes a resection for a cure less likely. Five of our eight patients who had nodal metastasis were dead within six months after colectomy.

The misfortune of the chronic ulcerative colitis patient who develops cancer is that his classical symptoms of cancer are justifiably treated as those of a relapse. To find the cancer early requires frequent sigmoidoscopic and barium-enema examinations. Of the two, sigmoidoscopy is the more important, since the incidence of negative x-ray findings in cancer of the colon with chronic ulcerative colitis runs as high as 42 per cent.[7] White[13] feels that a patient with a flare-up after eight years of ulcerative colitis should have a colectomy. Others[3] recommend total colectomy if there is progressive or persistent x-ray evidence of ulcerative disease. Consequently, preventive surgery takes on a new importance in the treatment of a young person with chronic ulcerative colitis. Procrastination may result in an unapparent but fulminating malignant complication with a very poor five-year survival rate.

Steroids have a specific but limited role in the therapy of chronic ulcerative colitis. Kiefer[9] believes that the proper use of steroids is in the antigen-antibody reaction phase of chronic ulcerative colitis, and not in the later phase of bacterial invasion and local necrosis. Rosenak's questionnaire to members of the American Gastroenterologists Society and the American Proctologic Association[10] elicited the fact that 32 per cent of his 226 repliers felt that steroids cause an increase in complications. He further reported six instances of perforations among 60 of his own patients who had been treated with steroids. Bruce and Cole[4] report a threefold increase in hemorrhage of shock proportions and acute perforations in patients treated with steroids, as compared to those who were not treated with cortisone. Rhoads[11] admonishes us against prolonging a premalignant disease and increasing the hazard of cancer in chronic ulcerative colitis. He says, "Cortisone therapy often extends the period of medical therapy too long and may be as treacherous as morphine in appendicitis." In a disease with potential malignancy, the masking of any symptomatology is a sobering responsibility.

SUMMARY

1. Twenty-seven colectomy specimens obtained from 164 patients with chronic ulcerative colitis revealed eight cases of cancer of the colon. This represents a colon cancer incidence of 4.9 per cent.

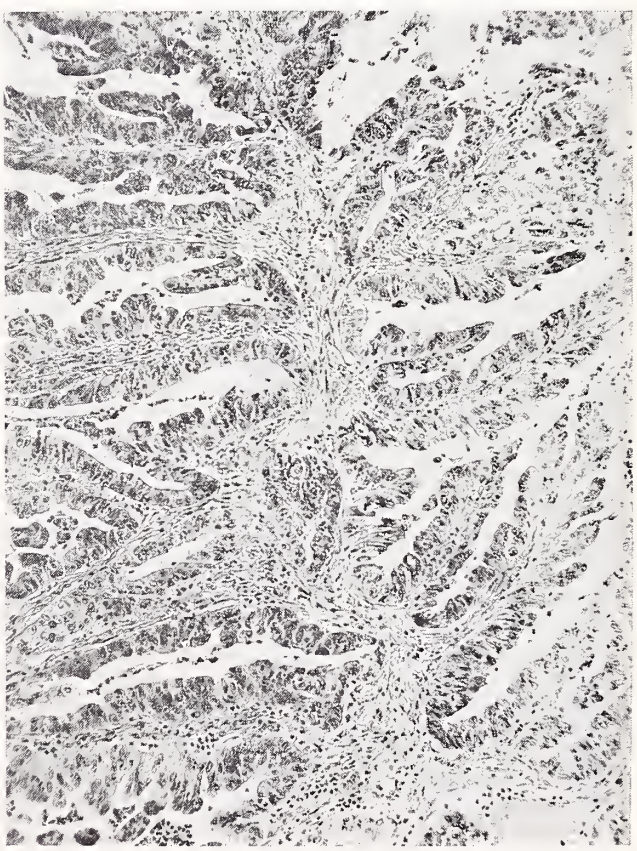


Figure 4. A 30-year-old white female who had six separate sites of adenocarcinoma in her colon. These were polypoid, constricting or ulcerating cancers. Shown is an area of expansile, intraluminal papillary adenocarcinoma. (×135)

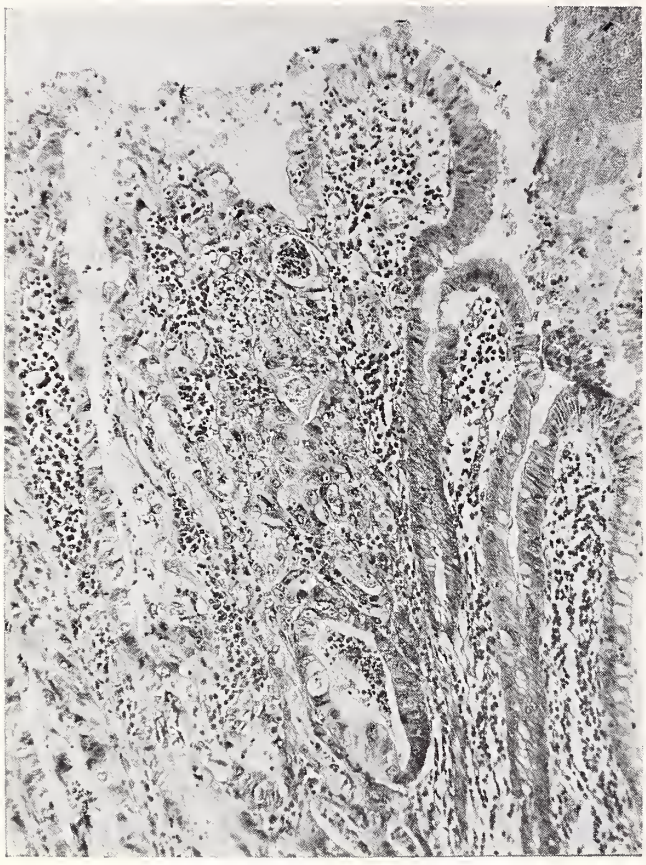


Figure 5. The same colon, showing an area of mucosa undergoing malignant transformation. Dedifferentiation can be seen amid the inflammatory changes in the epithelium. (×135)

A ninth case of cancer has been mentioned but was not included in our series, since no colectomy specimen was obtained.

2. The incidence of multicentricity in cancer of the colon with chronic ulcerative colitis is three times as great, and the five-year survival rate is three times poorer, in comparison with "ordinary" cancer of the colon. The age of onset for cancer of the colon is 20 years earlier in patients who have had ulcerative colitis, as compared with those who have no past history of colonic disorders.

3. Cancer of the colon in chronic ulcerative colitis is a fulminating complication that deserves earlier diagnosis and earlier preventive treatment by total colectomy.

4. Acute perforations and hemorrhage of shock proportions occur more frequently with cortisone therapy. Steroids should be used cautiously in a proliferative, inflammatory, premalignant colonic lesion such as chronic ulcerative colitis, for they may mask rampant carcinomatous transformations.

ACKNOWLEDGMENT

I am grateful for the encouragement and advice of John W. Green, Jr., M.D., chief pathologist, Iowa Methodist Hospital.

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Killing the Goose

In many of the major countries of the world, including the United States, an attack is being mounted on the patent system, which has been the source of so much of the improvement in human welfare. For the moment, the attack is concentrated on patents in the pharmaceutical field, but the same arguments could easily be applied to the whole principle of patent protection.

In the words of the United States Constitution, the purpose of patent protection is to "promote the progress of science and useful arts" and the method is to secure inventors, for a limited period, "the exclusive rights" to their discoveries. Compulsory licensing, as now contemplated, is hardly consistent with the concept of a patent as granting "exclusive rights."

The basic argument advanced to support such proposals is a humanitarian one—people should not be compelled to pay more for lifesaving drugs than they would pay in the absence of patent protection. This sounds appealing, but it overlooks the question of whether these drugs would have been developed at all without the promise of patent protection. Inexpensive drugs may save more lives than expensive ones, but non-existent drugs will save no lives at all.

Patent rights are property rights, in just as real a sense as the ownership of a home or automobile is a property right.

—GEORGE HAGEDORN, *Director of Research*
National Association of Manufacturers

State University of Iowa
College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 15-YEAR-OLD WHITE GIRL was admitted to the University Hospitals with the chief complaints of syncopal episodes and dyspnea on exertion. The first syncopal episode had occurred two years before her admission, and she had experienced seven or eight such episodes since. They always occurred following exertion and were brief (3-5 minutes in duration). In addition, she had sometimes experienced discomfort in her chest or a severe headache when she ran or exercised. On at least two occasions when the severe headaches were present, she had difficulty for about an hour in moving her left arm and leg. Her most recent attack had occurred while she was running upstairs, and she had become dizzy and had fainted.

Her past history was non-contributory, except that at age 12 years she had been brought to a physician for help with an obesity problem and had been put on thyroid medication for a brief period.

Physical examination on admission revealed an obese girl weighing 137 lbs. and measuring 5 ft. 1¾ in. in height. Her blood pressure was 105/80 mm. Hg., and her pulse rate was 92/min. Her respiratory rate was 21/min. She had ruddiness of the cheeks and fingertips, and her skin was cool and quite moist. A prominent "A wave" was seen in her neck veins. The chest was symmetrical, and the lungs were clear to percussion and auscultation. The right ventricle was felt to be overactive. No thrill was palpable. There was a Grade III systolic murmur over the pulmonary area that was transmitted toward the left shoulder. A gallop rhythm was present along the lower left sternal border. S2 at the second left interspace was decreased. The liver was enlarged to 4.5 cm. below the right costal margin, and was tender to palpation. Peripheral pulses were equal but of poor volume. Both lower extremities showed traces of edema.

Laboratory studies revealed a hemoglobin level of 15.0 Gm./100 cc., and a white blood cell count of 7,050/cu. mm. A peripheral differential blood smear showed segmental leukocytes 58 per cent; lymphocytes 38 per cent; and monocytes 4 per cent. The hematocrit was 50 per cent. The erythrocyte sedimentation rate was 1 mm./hr. The urine had a specific gravity of 1.025, a pH of 6 and 2+ albuminuria, and on microscopic examination it was negative for glucose and blood. The protein-bound iodine was 5.5 mcg./100 ml. A chest roentgenogram was interpreted as showing an enlarged heart, with a cardio-thoracic ratio of .55. Enlargement of both the right and left ventricles was present, with the left ventricular enlargement predominant. The lung fields appeared clear, without evidence of congestive heart failure. The pulmonary artery segment was quite prominent, and the aortic knob was diminutive. The electrocardiogram was interpreted as showing a first degree AV block, P-wave abnormalities suggesting atrial disease, right ventricular hypertrophy, and S-T segment changes suggestive of myocardial disease.

The patient was placed on lanoxin (Digoxin), and subsequently there was clinical evidence of improvement. Cardiac catheterization was attempted on the fifth hospital day, with the following results:

TABLE I

FINDINGS ON CARDIAC CATHETERIZATION

Location	O_2 Content Volume	Pressure in mm. Hg Phasic	Mean	O_2 Saturation (Per Cent)
Superior vena cava	7.04			
Superior vena cava	7.54			
Right atrium	7.20	16/8	6	
Right atrium	7.54			
Right ventricle	7.71	141/5/19	70	
Brachial artery	19.51	85/69		87.84
Brachial artery after 100% O_2				100 + 1.13

The pulmonary artery was not entered at any time during the catheterization.

On the following day, an intravenous angiocardiogram was performed. Approximately 1½ to 2 hrs. after the procedure, while the patient was sitting up to use the bedpan, she suddenly had difficulty in breathing, and became cyanotic and unresponsive. The pulse rate was 100/min. and regular, but the blood pressure was unobtainable

in the arms, though the femoral pulses were of good quality. Oxygen was given by mask, and in a few minutes the patient was responsive and the cyanosis disappeared. She was kept in an oxygen tent for the remainder of the day, and seemed to have improved. However that evening, she suddenly became apneic, with loss of heart beat, and resuscitative measures were unsuccessful.

CLINICAL DISCUSSION

Dr. Donal L. Dunphy, Pediatrics: Mr. Jons will discuss the case for the students.

Mr. Charles Jons, junior ward clerk: We approached the problem of diagnosis by considering the most common causes of right ventricular hypertrophy and secondary heart failure. In general, we felt there were two possible causes to consider in this particular case. First was cardiac disease involving the right side of the heart, possibly of congenital origin, and second was a pulmonary disorder resulting in pulmonary hypertension. On the basis of the protocol, we feel that the patient probably had pulmonary stenosis for the following reasons: 1. sudden onset in adolescence, which is typical of the disease; 2. signs of right ventricular heart failure including the jugular A waves, hepatomegaly and peripheral edema; 3. Grade III systolic murmur in the pulmonic area, transmitted to the left shoulder; 4. diminished second heart sounds in the pulmonic area; 5. x-ray findings of a clear lung field and a prominent pulmonary-artery segment, possibly the result of post-stenotic dilatation.

We also considered some other cardiac entities in our differential, but ruled them out. They included right-to-left shunt, but on cardiac catheterization there was no evidence of that anomaly, since when the patient was given 100 per cent oxygen, the arterial oxygen saturation increased to 100 per cent, leading one to believe that no blood bypassed the lungs. Also, there was no history of previous cyanosis. This would tend to rule out tetralogy of Fallot or Eisenmenger's complex. Next, we considered left-to-right shunt. There was no evidence on cardiac catheterization of a left-to-right shunt, since the right atrial and right ventricular oxygen saturations were uniformly normal or slightly below normal. If a shunt were present, one would expect the blood to have an increased oxygen content on the right side of the heart. Hence, we ruled out atrial septal defect and ventricular septal defect.

We considered two lung disorders. Secondary pulmonary hypertension due to a primary lung disorder was immediately ruled out, since there was no history of chronic lung disease, and it also was contraindicated by the physical and x-ray findings. However, primary pulmonary hypertension, although a rare entity, had to be considered. The clinical picture is variable, but very similar in many respects to the case presented here. Since the pulmonary artery was not entered on catheterization, we felt there was insufficient evidence to rule this out completely.

The immediate causes of death most probably were acute heart failure, sudden arrhythmia or cardiac arrest, or a combination of any of these three. We didn't feel we had enough information to arrive accurately at a single answer. We also considered pulmonary embolus with secondary pulmonary infarction as a cause of death. The description is suggestive of this, and there was a history of previous venostasis.

In summary, we feel that this patient probably had pulmonary stenosis with right heart failure. We also feel that primary pulmonary hypertension is a possibility, for the reasons just mentioned.

Dr. Dunphy: Dr. Vlad will give us his impressions of the protocol.

Dr. P. Vlad, Pediatrics: I think this diagnostic problem has been almost entirely solved, and that I can't add very much, since I reached the same conclusions.

If we go over the first paragraph in the protocol, we note that there was a history of syncopal attacks for about two years. This is indeed a very significant and quite uncommon finding in the history of a child with heart disease. Syncopal attacks will occur on occasion in the pediatric age groups, but they are rare. Their presence brings to mind a number of diagnostic possibilities: (1) All obstructive lesions—severe aortic stenosis, severe pulmonic stenosis, severe obliterative pulmonary vascular disease, primary pulmonary hypertension. These are anomalies in which the cardiac output may be so low that any increase in demand can result in cerebral insufficiency. (2) Arrhythmias accompanied by syncopal attacks. These can occur in pediatrics but they are rare. Supraventricular tachycardia is the most common. If prolonged enough, it will lead to cardiac failure, rather than to syncope. Paroxysmal ventricular tachycardia is very rare, and paroxysmal ventricular fibrillation is extremely rare. Congenital heart block, which is usually identified in childhood, is notorious for not causing Stokes-Adams attacks. Even though children may have heart rates as low as 40/min. or 36/min., their stroke volume is so large that they can maintan and adjust their cardiac output. The only two cases reported with Stokes-Adams attacks were babies who, in addition to congenital heart block, had endocardial fibroelastosis. This is a condition which in itself limits the left-ventricular function.

As far as the physical examination is concerned, several findings are relevant and significant. Blood pressure was 105/80 mm. Hg. With a low cardiac output, the patient was maintaining her cerebral flow and perhaps other vital functions by increasing the peripheral resistance. Evidence for this was the narrow pulse pressure, the high diastolic pressure and the cool, moist skin. The ruddiness of her cheeks and fingertips probably represented peripheral stasis. The pulse and respiratory rates

were not rapid, and the chest was clear. These findings should rule out left-heart failure. On the other hand, the peripheral edema, the marked hepatomegaly and the gallop rhythm gave strong evidence of right-heart failure. The prominent A waves in the neck veins meant that there was impaired atrial emptying caused by either tricuspid obstruction or a very high right-ventricular and -diastolic pressure.

The presence of a systolic murmur in the pulmonic area was quite significant, for it rules out the presence of rheumatic heart disease (acute or chronic), and suggests that the pathologic process was located in the right heart or pulmonary artery.

Perhaps the most critical finding in the physical examination was the presence of a decreased pulmonary second sound. It indicated that pulmonary artery pressure was reduced. Knowing this, we can eliminate most of the anomalies in which right heart failure coexists with high pulmonary pressure, such as primary pulmonary hypertension, the secondary pulmonary hypertension from cor pulmonale, or multiple pulmonary embolism, pulmonary venous obstruction, cor triatriatum, and severe mitral stenosis. In all of these the pulmonary second sound should be very loud, particularly in a child in whom the anomaly is severe enough to cause chronic heart failure.

The absence of polycythemia was significant in that it tends to rule out right-to-left shunts such as occur in tetralogy of Fallot, single ventricle transpositions, etc. The blood count provided nothing of significance. There was no indication of active inflammation; the sedimentation rate was normal; and an albuminuria of 2+ represented impaired renal function, probably as a consequence of heart failure. The protein-bound iodine, I suspect, was taken only because the patient had received thyroid medication.

May we see the x-rays, Dr. Behlke?

Dr. F. M. Behlke, Radiology: Initially, the examiners took postero-anterior, left anterior oblique and left lateral films of this girl's chest, and they also performed fluoroscopy. They concluded that her heart was large—probably because of biventricular enlargement. There was a very large main pulmonary artery segment, and the distal pulmonary vessels attenuated rapidly. At fluoroscopy, it was thought that both the right ventricle and the left ventricle were enlarged, with the left-ventricular prominence predominating. The interpretation was that the roentgen findings would be compatible with pulmonic valvular stenosis. The significance of left ventricular enlargement could not be explained.

Dr. Vlad: Do you have any information as to whether the pulmonary vessels pulsated or not at fluoroscopy?

Dr. Behlke: I don't think that was specifically mentioned.

Dr. Vlad: It would have been interesting and helpful to know whether these large pulmonary arteries on the right side pulsated or not. The absence of pulsation would have made a diagnosis of pulmonic stenosis. If, on the other hand, the pulsations of the hilar markings (or of the main vessels) were extremely prominent, and no vessels or pulsations could be seen peripherally, then primary pulmonary hypertension might have been indicated. The electrocardiogram shows giant P waves. They are about 8-10 mm. in height, they are peaked, and they indicate severe right-atrial enlargement. This finding, of course, goes well with the presence of high A waves in the neck, and indicates again that there was severe difficulty in right-atrial function. The precordial leads show several things. First, they confirm the presence of severe right-atrial hypertrophy. Second, they reveal the presence of right-ventricular hypertrophy of enormous degree. We recorded right-ventricular potentials from the extreme right side of the chest all the way across to V5 and V6. These would indicate that the right ventricle occupied the entire anterior surface of the heart. There was no indication whatsoever of any overloading of the left ventricle or atrium.

The cardiac catheterization, unfortunately, was an incomplete test, in that the pulmonary artery could not be entered. That doesn't mean, necessarily, that the right ventricle or pulmonary valve was anatomically obstructed. The oxygen studies indicate that there were no left-to-right shunts. That finding, however, does not rule out the presence of a small ventricular defect or a reversal of shunt. The peripheral oxygen saturation was low when the patient was breathing air, but it became normal with the inhalation of oxygen. This phenomenon favored the absence of a right-to-left shunt.

The most significant findings are in the pressure measurements—16/8 mm. Hg, right atrium. The high values are probably A waves, and represent the cause for the neck pulsations and the giant P waves in the electrocardiogram. In the right ventricle the systolic pressure was 141, and the highest diastolic pressure was 19 mm. Hg. A systemic pressure of 85/69 mm. Hg was recorded in the brachial artery. The central aortic pressure should be at least 10 mm. Hg lower, and therefore one can say that for all practical purposes the right-ventricular pressures were twice as high as the systemic. This phenomenon implies that there was severe obstruction to right-ventricular blood flow.

The obstruction could have been anywhere—inside the right ventricle, at the pulmonary valve, outside the pulmonary valve, or all the way out to the peripheral pulmonary arteries. Furthermore, it could have been on the other side of the pulmonary circulation at the level of the pulmonary veins or left atrium. Second, it means that the ventricular septum was intact. With a ventricular defect of any size, provided that it was more than just a pinpoint hole, one would expect equalization

of right and left ventricular pressures. The anomalies in which this combination is encountered are: (a) Mitral atresia. This is a disease in which the mitral valve fails to develop. Such patients die in the first few days of life. (b) Cor triatriatum. This is a more common cause of pulmonary venous obstruction in which the left atrium is partitioned into two compartments, one above and one below, one receiving the pulmonary veins and the other communicating with the mitral valve, usually by a very minimal hole 1½-2 mm. in diameter. There should be pulmonary hypertension and therefore a loud pulmonary second sound. (c) Severe mitral stenosis. Hemodynamically, this differs from the preceding one only in that the left-atrial and pulmonary-wedge pressures are equal. The pulmonary second sound should be accentuated. (d) Primary pulmonary hypertension. In this instance, the pulmonary-artery pressures can exceed the systemic pressures. Here again we must conclude that this was not our patient's trouble, for her pulmonary second sound was normal or diminished. (e) Peripheral pulmonic stenosis. This may have the same result. If the obstruction is at the root of the pulmonary arteries or out in the secondary and tertiary branches of the arteries, the pulmonary vascular bed can be diminished to such an extent that marked pulmonary hypertension will result. Here again, the second pulmonic sound should be loud. (f) Primary obstructive idiopathic cardiomyopathy of the right or left ventricle. This is another type of obstruction that might lead to these findings. In this case, the obstruction should be predominantly right-sided in order to cause the marked right-ventricular hypertrophy. This condition is very rare. Left-sided obstruction seems ruled out by the presence of a normal second sound. A right-sided obstruction is not ruled out. (g) Valvular or infundibular pulmonic stenosis with an intact ventricular septum. This is the most common obstruction.

The angiocardiogram should shed some light on our problem, and we shall go over it now.

Dr. Behlke: A biplane intravenous angiocardiogram was performed—"biplane" meaning simultaneous AP and lateral filming performed during and shortly after the injection phase. A catheter was inserted through the left antecubital vein and passed into the superior vena cava, with the tip just proximal to the right atrium. Serial films were obtained through 2½ seconds, the actual injection of contrast material lasting 1.7 seconds. Since we don't have enough view boxes, we're not showing the complete series. I have selected the last two films. You will notice the contrast material in the superior vena cava and also in the large right atrium, and you can see some of it in the enlarged right ventricle. However we do not see the pulmonic valvular area clearly. Now in a normal injection at 2½ seconds, we should be able to visualize the pulmonary valve and pulmonary circuit readily, but we don't do so here. Therefore we must conclude that there was some obstructive phenomenon at the right-ventricular level or distally, causing a hold-up or delay of flow from the right atrium. It is impossible to tell what the nature of that obstructive phenomenon was, for the critical pulmonic area wasn't diagnostically demonstrated.

Dr. Vlad: It is unfortunate that this happened to be a venous angiogram, rather than a selective angiocardiogram. In both the AP and the lateral views, the right atrium covers the right ventricle and masks the pulmonary valve. The infundibulum, however, seems to be open and of normal size, and the right ventricle is greatly dilated. These findings eliminate the presence of infundibular pulmonic stenosis. No statement can be made as to the size of the pulmonary valve.

I must draw the following conclusions: (1) This was not a case of rheumatic heart disease. There was no history of rheumatic fever, for there were no laboratory findings of acute inflammatory activity or of preceding streptococcal infection. The presence of a murmur in the pulmonic area made rheumatic heart disease unlikely. The electrocardiogram that showed severe right-ventricular hypertrophy was incompatible with acute or chronic rheumatic heart disease. (2) Therefore this was some type of congenital heart disease, characterized by severe obstruction to right-ventricular outflow. I must conclude that this occurred somewhere at the pulmonary-valve level or inside the right ventricle. I cannot rule out the presence of obstructive cardiomyopathy or a myocardial tumor that invades the right ventricle and mimics pulmonic stenosis. If one takes the common—and we must take the common—this should be a case of pulmonary stenosis, either valvular or infundibular. The patient's syncopal attacks were related to the fact that she had a severely decreased cardiac output and a cerebral insufficiency every time she exercised.

Dr. Dunphy: Let's check the physical finding that you have emphasized so strongly, Dr. Vlad—namely, the diminution of the pulmonary second sound. Yes, the protocol says that S2 in the pulmonic area was 4+ decreased. Since you placed so much emphasis on that finding, I thought it only fair to make sure of it. What is it that you believe this young girl died from?

Dr. Vlad: I hate to admit it, but obviously this girl had no reserve at all. Her cerebral circulation must have been at the edge of syncope all of the time, and she fainted on many occasions. Now, cerebral insufficiency is one mechanism of death from radio-opaque studies. Death, I strongly suspect, wasn't due to an arrhythmia but to cerebral insufficiency related to the injection of contrast medium.

Dr. Dunphy: I think we can go on to the pathologic findings.

Dr. A. R. Tammes, Pathology: At autopsy the main gross findings were present in the heart,

lungs and liver. The heart was quite large. It weighed 400 Gm., whereas a normal heart weighs somewhere in the neighborhood of 250-280 Gm. The right chambers showed marked dilatation, especially in the right atrium. The right ventricle, besides showing the dilatation, showed marked hypertrophy, and its wall measured 13 mm. in thickness. Normal thickness is somewhere between 3 and 5 mm. The left side of the heart and all of the valves had normal measurements and configurations, and no congenital defects were found. The lungs weighed 330 and 250 Gm., right and left. There were numerous, small atheromatous plaques in the small and middle-sized arteries of both lungs. No thrombi were found. Grossly, the liver showed evidence of marked passive congestion. Microscopically, the lungs showed marked congestion and very widespread sclerosis of the pulmonary arteries. Some of the larger arteries had some atheromatous plaques similar to those found in systemic atherosclerosis. The smaller pulmonary arterial vessels showed endothelial proliferation and hypertrophy of the media—what we term hyperplastic arteriolosclerosis. Marked alveolar capillary dilatation and congestion were also present. The vessels in other areas of the body were normal. The liver showed extensive, severe passive congestion.

The disease process was the one that is termed *primary pulmonary vascular sclerosis.* Clinicians are more likely to use the term *primary pulmonary hypertension.* The requirements for this diagnosis consist of (1) significant hypertrophy of the first ventricle but not of the left, which we saw in this particular patient, and (2) an absence of all other factors commonly believed to cause secondary vascular sclerosis, i.e., congenital heart disease, any of the numerous chronic pulmonary diseases, acquired heart diseases, and some others.

Death in this particular patient was due to cardiac failure, with cor pulmonale due to the pulmonary hypertension and the primary vascular sclerosis.

Student: How long does it take for this process to develop, and is it possible that there was no murmur at the time the patient was placed on thyroid medication?

Dr. Dunphy: I'm not clear as to why the patient was placed on thyroid medication. I think the indications may have been her fatigue and her obesity, rather than any evidence at all of thyroid dysfunction.

Dr. Tammes: I believe there was another part to the question. The student asked how long it takes for primary pulmonary vascular sclerosis to develop. From the studies that pathologists are aware of, this disease process has been seen in infants, and in patients up to the age of 70. Some patients have had very short histories, and some have had histories of many years. It appears that the length of time it takes for changes to develop is extremely variable. They may occur in a very short time, but also may take many, many years to develop fully.

Student: In the x-rays, we saw an enlargement of the pulmonary outflow tract. Did this show up on pathologic examination?

Dr. Tammes: Yes, there was some enlargement.

Student: The pulmonary valve was normal?

Dr. Tammes: The pulmonary valve and all other valves were normal in configuration and measurement.

Dr. Vlad: There were no abnormal muscle bands found in the right ventricle? There were no peripheral pulmonic stenoses?

Dr. Tammes: None whatsoever.

Student: The protocol says that the patient's blood pressure was unobtainable, yet she had strong femoral pulses. Do the clinicians or the pathologists have any explanation for this?

Dr. Tammes: I assure you that the pathologist has none.

Dr. Dunphy: I don't know what those findings meant. I can read you the note: "Called to see patient following return from angiography. Patient had been sitting on the bedpan when she suddenly had difficulty breathing and became cyanotic. Found patient in a semi-sitting position, blue and slightly unresponsive. Oxygen started. Foot of bed elevated. Pulse was slow and regular. Blood pressure could not be obtained. Femoral pulses, however, were good and strong. Felt hypotensive episode could possibly be due to acute gastric dilatation. Patient had just swallowed a cup of 7-Up." I have no explanation.

Dr. Hans Zellweger, Pediatrics: I wonder whether Dr. Vlad would comment on the pathogenesis and etiology of this condition.

Dr. Vlad: It appears that this is a congenital anomaly. It may be seen in babies very early in life, in two circumstances. In rare instances this condition will not be associated with any intracardiac anomalies. It has been reported in babies a few months of age, dying rapidly from heart failure. More often, this sort of pulmonary pathology occurs in association with ventricular septal defects (Eisenmenger's syndrome). The amazing thing is that in the majority of cases the pulmonary vascular changes are not an acquired process. They seem to have existed from the beginning. They don't seem to be related to long-standing pulmonary hypertension or long-standing increased pulmonary pressure. For some reason it is a disease of girls. The ratio between females and males is somewhere between 4:1 and 7:1. This is also true for the type that is associated with congenital heart disease. It is a disease that affects the lungs and not the systemic vessels.

Student: What are the mechanics of the intensity of the second sound? Does it vary with the amount of blood passing through this valve, or does it vary with the pressure?

Dr. Vlad: The intensity of the sound is a function of pressure, not a function of blood flow. Nor-

mal pressure will leave the intensity of the second sound unchanged, but high pressure will increase it proportionally. The flow will modify the degree of splitting of the second sound.

Dr. Behlke: If this work-up could be done over again, Dr. Vlad, would you advise doing a biplane intravenous angiocardiogram again, or would you prefer just to catheterize?

Dr. Vlad: I feel that venous angiocardiography has a very limited usefulness, with some rare exceptions such as very complex cyanotic anomalies in newborn babies. The case under discussion is one in which the information obtained by the technic not only wasn't helpful but actually was misleading. Furthermore, I don't regard cardiac catheterization and angiocardiography as two separate technics. To me, opacification studies of the heart are a simple component of cardiac catheterization. The available tests should be used as one package whenever the diagnosis or physiologic evaluation of a patient with congenital heart disease is indicated.

Dr. Dunphy: Is there any way to make this diagnosis in a living patient? I think you've already answered that question. Yes, it could have been made.

Dr. Vlad: Yes, it is essentially a clinical diagnosis made in living patients. The laboratory tests rule out associated defects such as a ventricular defect which can be completely silent.

Student: Were attempts made to catheterize the pulmonary artery?

Dr. Dunphy: That point isn't clear in the protocol. It simply says that it couldn't be done, but I'm sure it was tried.

Student: What is the cause of a systolic murmur?

Dr. Vlad: The majority of murmurs described in cases of primary pulmonary hypertension are diastolic murmurs due to pulmonary regurgitation. Most such patients, however, have just a loud P2 and no systolic murmurs. When systolic murmurs are present over the pulmonic area, one can speculate that they may be related to a thickened pulmonic valve or to aneurysms of the pulmonary artery.

Dr. Dunphy: I might add just one comment. The protocol says that it was impossible to enter the pulmonary artery because of the large size of the right ventricle. I presume what was meant is that the catheter was curling in the right ventricle, and that it couldn't be passed farther.

Student: Was the pulmonary vasculature on x-ray simply misleading?

Dr. Vlad: No, I don't think so. This is part of the picture. The hilar vessels are very prominent and the major pulmonary artery branches are large, yet the periphery of the lung is clear. It is just as clear as in pulmonic stenosis because the peripheral vascular bed is severely constricted, and in consequence there is a diminished pulmonary flow.

SUMMARY OF NECROPSY FINDINGS

Primary pulmonary vascular sclerosis
Cardiac hypertrophy, cor pulmonale type
Congestive heart failure, with severe visceral congestion

STUDENTS' DIAGNOSIS

Pulmonary stenosis with right heart failure
or
Primary pulmonary hypertension

DR. VLAD'S DIAGNOSIS

Pulmonary stenosis, valvular or infundibular, with death due to cerebral insufficiency from contrast medium.

Coming Meetings

IN STATE

Dec. 2	**Postgraduate Course, Tumors of the Nervous System,** Iowa Methodist Hospital Auditorium, Des Moines.
Dec. 4-5	**Industrial Health Conference,** SUI College of Medicine, Iowa City.
Dec. 11	**Cardiac & Respiratory Disease Conference,** SUI College of Medicine, Iowa City.
Jan. 26-27	**Obstetrics and Gynecology,** SUI College of Medicine, Iowa City.

CONTINENTAL U. S.

Dec. 5-10	**American Academy of Dermatology,** Annual Meeting, Palmer House, Chicago.
Dec. 7-8	**Basic Review of Biochemistry for Practicing Physicians,** University of Nebraska College of Medicine, Omaha.
Dec. 9	**American College of Physicians Regional Meeting for Internists in North Carolina,** Winston-Salem, North Carolina.
Dec. 11-12	**Conference on Blood and Blood Banking,** Drake Hotel, Chicago.
Dec. 13	**American College of Physicians Regional Meeting for Internists in Texas,** Sheraton-Dallas Hotel, Dallas.
Dec. 14-16	**The Stomach (Including Related Areas in Esophagus and Duodenum) (Hahnemann Medical College and Hospital),** Sheraton Hotel, Philadelphia.
Dec. 18-19	**New Horizons in Lymphoma and Leukemia,** University of Nebraska College of Medicine, Omaha.
Jan. 4-8	**Stroke and the Cerebrovascular Diseases,** American College of Physicians, Rancho Los Amigos Hospital, Downey, Calif.
Jan. 9-10	**Symposium on Cerebral Vascular and Peripheral Vaseular Disease,** Minnesota Heart Association, Radisson Hotel, Minneapolis.
Jan. 17-23	**11th Annual General Practice Review,** University of Colorado School of Medicine, Denver.
Jan. 21-22	**Obstetrics and Gynecology,** University of Nebraska College of Medicine, Omaha.
Jan. 23-24	**Fourth American Psychiatric Association Colloquium for Postgraduate Teaching of Psychiatry,** O'Hare Inn, Chicago.
Jan. 25-27	**Sectional meeting, American College of Surgeons,** Atlanta Biltmore Hotel, Atlanta, Ga.
Jan. 25-30	**Workshop in Teratology—Drug Research Board of National Academy of Sciences,** University of California, Berkeley.
Jan. 27-29	**Bedside Diagnosis of Heart Disease (Part II),** Hahnemann Medical College and Hospital, Philadelphia.



A CHRISTMAS REASSESSMENT

A Merry Christmas to you and your family. May the spiritual meaning of this happy time take precedence over material things.

This is a fitting time for us to assess our values, and to learn anew that *things* are no guarantee of happiness. It is *in giving and serving* that each of us finds life's greatest rewards. This philosophy—one that is appropriate not just for Christmas but for every day of the year—has been ably expressed by Leo Rosten:

"Ask an American mother what she wants most for her child. The chances are she will reply: 'To be happy.' But there was a time when what we wanted for our children, or ourselves, was to amount to something.

"What is this myth 'happiness' that has bamboozled so many of us? And what is this idiotic thing 'fun,' which so many chase after? Where people once said 'Good bye,' they may now say, 'Have fun.' They even talk, God help us, of such things as 'a fun time,' 'a fun thing,' 'a fun book.'

"I know of nothing more depressing than the frantic pursuit of 'fun.' No people are more miserable than those who seek desperate escape from self, and none are more impoverished, psychologically, than those who plunge into the strenuous frivolity of night clubs, which I find a form of communal lunacy. The word 'fun' comes from the medieval English 'fon'—meaning fool.

"Where was it ever promised us that life on this earth can ever be easy, free from conflict and uncertainty, devoid of anguish and wonder and pain? Those who seek the folly of unrelieved 'happiness' —who fear moods, who shun solitude, who do not know the dignity of occasional depression—can find bliss easily enough in tranquilizing pills, or in senility.

"The purpose of life is not to be happy. The purpose of life is to matter, to be productive, to have it make some difference that you lived at all. Happiness, in the ancient, noble sense, means self-fulfillment—and it is given to those who use to the fullest whatever talents God or luck or fate bestowed upon them.

"Happiness, to me, lies in stretching, to the farthest boundaries of which we are capable, the resources of the mind and heart."

LET'S REALLY SEARCH FOR A SOLUTION

As of November 1, 1964, there had been 545 fatal automobile accidents on Iowa highways since the first of the year, and 671 people had been killed. Accidents on primary highways were responsible for 351 deaths; 216 had occurred as a result of accidents on secondary roads; and 104 had resulted from automobile accidents in cities and towns.

According to the State Commissioner of Public Safety, 70 per cent of the fatal accidents in Iowa can be attributed to violations of traffic laws by drivers. Speed is not considered the primary cause of most accidents, though speed is unquestionably a common factor in the fatal outcomes of many mishaps. Liquor has been found to be a factor in only about 20 per cent of fatal accidents in Iowa, in contrast to reports from other parts of the nation where drinking has been held partially responsible in over half of all fatal highway accidents.

The apathy and indifference that the public shows toward our annual carnage on the highway are beyond understanding. It appears that a high death rate is accepted as part of the price of modern automobile transportation. If there were such a toll from an infectious disease known to be largely preventable, the public would be in an uproar and would demand action to bring it to an end.

Isn't it time for us to adopt a more realistic and positive approach to the problem? A continuing, intensive educational campaign employing all news media and emphasizing individual responsibility and the rules of safe driving would at least focus attention upon the subject. Greater discrimination in the issuance of drivers' licenses should be given serious thought. Enthusiastic support should be given to police officers in their efforts to enforce traffic laws rigidly. Reduction of speed on secondary roads and the use of fourway stop signs at blind intersections could reduce accidents in rural areas. Sentences for traffic-law violations should be heavy enough to deter repetitions. A brief revocation of an operator's license or a modest fine is not much of a deterrent to a driver who has shown himself willing to jeopardize the lives of everyone else on the highway. Every bar and tavern should display signs cautioning the drinker not to drive, and offenders should not be given a simple slap on the wrist.

Physicians have an intense interest in this problem, and they have an obligation to contribute to its solution. Patients who are physically, mentally or emotionally incompetent to drive should be urged to turn in their drivers' licenses, or their families should be informed of the patient's incompetence and urged to keep him from driving, for his own and everybody else's benefit. Physicians are not authorized to report such patients

Editorials continued...

to the public-safety authorities, however, and it is contrary to medical ethics for them to do so.

It is time for us to make a strenuous effort to overcome public inertia with regard to highway accidents. Not until the public demands it, will the sad toll be reduced. Your efforts to further this cause may save a life. And the life you save may be your own!

GASTRIC FREEZING FOR DUODENAL ULCER

Doctors, like other human beings, are quick to seize upon any new "miraculous" agent or method for treating a "popular" disease. Following the announcement of miraculous benefits from the treatment of duodenal ulcer by gastric freezing, practicing physicians in Iowa were besieged with questions from their ulcer patients about the new technic, and with demands for treatment with it. Newspapers and magazines, always on the lookout for a dramatic story, rushed headlines and stories about the new method onto the newsstands. Many doctors bought the new freezing or cooling units before becoming acquainted with the indications, contraindications, incidences of morbidity and true value of the procedure.

It was not long before articles coming from the University of Minnesota described the necessity for several freezings of the stomach, and revealed that freezing did little or nothing to the acid secretion of the stomach several months after the treatment.

Now, an article from the University of Illinois and Hines Veterans Administration Hospital* has described a controlled study comparing the effect of gastric freezing with the effect of a procedure which only simulated gastric freezing in duodenal ulcer patients. Such a study has been long overdue.

The treated patients received inflow temperatures of –17 to –20 degrees, and outflow temperatures of –12 to –15 degrees. Gastric balloons of the molded type were used, and volumes ranged from 750 to 900 ml., according to tolerance. "The controlled treatments were given under identical circumstances with inflow temperatures of 5°C.," the authors report. "This was low enough to feel cold to the patient, but safely above freezing temperatures and not expected to cause significant tissue alteration."

Results showed that all patients tolerated the procedure well, and the authors said, "Nearly all thanked us for this special treatment, whether the treatment had been freezing or control." No patient in the control group suffered any complications, but in the treated group there was one episode of melena requiring two transfusions, and another of transitory pyloric obstruction requiring continuous gastric suction for three days. "Pain recurrence rate was high in both groups in the six-month follow-up period," the investigators have reported, "and was not lower in the groups subjected to freezing. Substantial reduction of basal or augmented histamine stimulation to gastric secretion was not observed."

The lessons to be learned from such experiences are that although some investigations are undertaken in perfectly good faith and by men of excellent repute, the practicing physician would do best to "rest on his oars" when the new method of treatment is a dramatic one, as was the case in gastric freezing, and when the press has waxed enthusiastic before adequate control studies could be made by other doctors. The practicing physician should not be swayed by the press or pressured by his patients into taking premature action. As a rule, he should wait at least until two or three "opposing clinics" have agreed on the benefits of the new method of treatment.

—D. A. GLOMSET, M.D.

FISTULA-IN-ANO, PILONIDAL SINUS, AND DYES

For years, many surgeons have injected a dye into fistula-in-ano tracts and into pilonidal cysts and sinuses preliminary to surgery. The dye, usually methylene blue, stained the offending tract, permitted easy identification, and thereby facilitated complete surgical excision.

Proctologists apparently have an aversion to dyes, however. Nesselrod,* for instance, condemns their use in a very low key: "Dyes, colored solutions, etc. are not essential to the discovery of a primary opening. . . . Nor is the staining of a fistulous tract by some kind of dye (e.g., methylene blue) necessary for its identification." He also says, "The surgeon who used a dye in attempting to demonstrate an anal fistula was usually successful only in demonstrating his lack of knowledge of the pathogenesis of this entity." Nesselrod also is explicit about not using a dye to determine the extent of a pilonidal cyst. However, he candidly admits overlooking involved pilonidal tissue on occasion—an error that necessitates further surgery.

Drs. Dunphy and Pikula, writing in the SURGICAL CLINICS OF NORTH AMERICA,** contend that inject-

* Perry, G. T., Dunphy, J. V., Frurn, R. C., and Littman, A.: Gastric freezing for duodenal ulcer. GASTROENTEROLOGY, 47:6-9, (July) 1964.

* Nesselrod, J. P.: PROCTOLOGY IN GENERAL PRACTICE. Philadelphia, W. B. Saunders Co., 1950.

** Dunphy, J. E., and Pikula, J.: Fact and fancy about fistula-in-ano. SURG. CLIN. NORTH AMERICA, 35:1469-1477, (Oct.) 1955.

ing dye into a fistulous tract "merely obscures the tract." They thereupon give the *coup de grace* to the dye injection: "It would be as sensible to pour ink on a newspaper in order to facilitate reading!"

Well, this fastidious approach is quite impressive in theory, and manifestly colorful in language if not in fact, but it is not entirely convincing. It is difficult to conceive of any actual harmful effects from the use of a dye, and it is easy to attribute a considerable merit to its use. While it is true that injected dye does stain the tract and its various ramifications, when they exist, its use is not comparable to pouring ink on a newspaper. Rather, it is analagous to painting signs on a path—at times a winding and devious path. And a clearly marked path can be easily, reliably and completely excised. This latter procedure is of vital importance, for the penalty for failure to excise a fistulous or sinus tract completely is recurrence.

It's a neat trick when a kid rides downhill on his bike without holding onto the handlebars. It's also an example of a good way to fall flat on one's face! In similar fashion, it's a neat trick when a surgeon, without hanging onto available aids, operates on a fistula or pilonidal sinus and uses no dye. But it is also an example of a good way for him to fall flat on his face—or, to be more precise, to come a cropper on someone else's backside.

—DANIEL F. CROWLEY, M.D.

POST-TRANFUSION ANICTERIC HEPATITIS

The report of a study at the Philadelphia General Hospital and the University of Pennsylvania on the problem of post-transfusion anicteric hepatitis indicates that it occurs much more frequently than is commonly recognized.* Previous studies of the frequency of this condition have varied widely and have resulted in considerable controversy over the importance of this hazard.

A pilot study was set up at the Philadelphia General Hospital in February, 1963, and patients from the obstetric and gynecologic services who had received one or more units of whole blood in a single day were chosen as subjects. Excluded were patients with histories of previous transfusions, jaundice, alcoholism, malnutrition, or exposure to toxic drugs, and patients with any evidence of liver disease.

They were given complete physical examinations, and blood was drawn for assays of serum glutamic oxaloacetic transaminase (SGOT) and glutamic pyruvic transaminase (SGPT) and isocitric dehydrogenase (ICD) before or shortly after transfusions. Patients were instructed to return to the clinic three to four weeks after the transfusions, then every two weeks for 12 weeks, and finally every month until at least six months had elapsed, for a minimum of 10 visits. At each clinic visit a history was taken, a physical examination was done, and blood was drawn for an estimation of enzyme activity. If the patient had developed pertinent symptoms or if she showed an elevation of enzyme assays, hospitalization was advised, and in the hospital a battery of liver-function tests and a liver biopsy were done. A group of 25 patients from the same wards of the hospital who had received no transfusions served as controls in the study.

A total of 56 patients continued to return for follow-up study for at least six months, and several were followed for longer periods up to one year. A patient was suspected of having hepatitis if histologic evidence was demonstrated on liver biopsy, or if elevations greater than three standard deviations above the normal mean of all three enzyme determinations were found on repeated assays.

In the group of 56 patients, presumptive evidence of hepatitis was found in 10 (18 per cent). Jaundice did not develop in any of this group. Inasmuch as 115 units of blood had been given to the whole group, the risk of hepatitis in these patients was 8.7 per cent for each unit of blood administered. The patients who developed hepatitis had received an average of 4.4 units of blood. None of the control patients developed any evidence of liver disease.

Six of the 10 patients with a presumptive diagnosis of hepatitis were hospitalized. Four of the patients refused hospitalization, but the clinical picture and the serum enzyme levels of those women were simliar to those of the six patients who had histologic evidence of hepatitis. In two patients serum enzyme elevations developed in less than five weeks, and in eight patients the incubation periods varied from six to 14 weeks. Hepatitis developed in all patients who had received six or more units of blood. Six patients developed clinical symptoms of a mild nature. These consisted of anorexia, malaise and occasional nausea, but there was little correlation between the symptoms and the degrees of enzyme elevation.

In this study the SGOT and SGPT were the most sensitive and reliable indications of early hepatitis, and they were generally in agreement. The ICD was found to be less specific, and the degree of elevation was less marked. There wasn't always a correlation between the level of serum enzyme activity and the severity of the histologic evidence of hepatitis found on biopsy, though there usually was general agreement. Attempts at isolating a virus from specimens from various patients have been unsuccessful. The histologic changes on liver biopsy were characteristic of hepatitis in six specimens from four patients. The other two biopsy specimens were less specific, but the clinical and laboratory pictures in both patients

* Hampers, C. L., Prager, D., and Senior, J. R.: Post-transfusion anicteric hepatitis. NEW ENGLAND J. MED., 271:747-754, (Oct. 8) 1964.

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were similar to those of the rest of the group, justifying a diagnosis of mild hepatitis.

A review of the number of cases of icteric serum hepatitis diagnosed at the Philadelphia General Hospital in the last four years revealed an incidence of only five cases per 10,000 transfusions. As a result of the present study, it is pointed out that there may have been over 100 cases of anicteric hepatitis for each case of icteric hepatitis diagnosed.

There were 44 donors to the 10 patients who developed hepatitis, and 80 per cent of them were friends or relatives. Thus the results cannot be ascribed to the use of professional donors.

The authors acknowledge that the number of patients in their series was small. However, it is statistically significant that none of the 25 control patients developed evidence of hepatitis, whereas 10 of 56 transfused patients did. They deduce from their study that post-transfusion hepatitis is much more common than has been generally thought, in this country. They postulate that patients so affected may represent a continuing source of further infection, for there is no reason to believe that the subclinical form of the disease isn't transmitted. It is possible that in some of these patients, chronic liver disease may develop. When the overall risk of administering blood is taken into consideration, the hazard of subicteric hepatitis must not be overlooked.

A NO-SMOKING CAMPAIGN YIELDS NEGATIVE RESULTS

The outcome of an educational campaign in a California community of 3,000 population by two volunteer physicians, aimed at dissuading high school students from smoking, should be of interest to doctors everywhere.* The high school drew from a total population of approximately 10,000, and the high school had an enrollment of 550.

The educational campaign was carried out by the two physicians over a five-year period. Six 50-minute periods of instruction on the effects of smoking were given to the freshman class during a two-week period each year. The program consisted of classroom instruction, and included both lectures and motion pictures. The lectures told of the pharmacologic action of tobacco and of the increased incidences of certain diseases in smokers. The reasons youngsters have for starting to smoke were explored, and the social, cultural and psychological aspects of the problem were emphasized. The focus in all the lectures was upon the damage that tobacco does to health.

The participating physicians say that the students were attentive and interested, and that they asked many questions during the discussion periods. The program aroused community interest, as evidenced by newspaper coverage and by discussions in community groups.

However, from the answers to questionnaires distributed to the students of the high school, it was found that instead of a decrease in smoking, there had been a constant increase in the proportion of smokers over the last three years. It was found that 27.6 per cent of the students smoked in 1961; 35.5 per cent in 1962; and 40.3 per cent in 1963. During the 1963-1964 school year, after five years of the educational program, 63.5 per cent of the boys, and 19.1 per cent of the girls were smoking. During the three-year period from 1960-1961 to 1963-1964, smoking among freshmen increased from 17 to 30 per cent; among sophomores it increased from 21 to 33 per cent; among juniors it decreased by approximately one per cent; and among seniors it increased from 38 to 44 per cent.

Because of the appreciable increase in the numbers of freshmen smoking, as shown in the 1963-1964 questionnaire, the survey was extended to include students in the junior high school. Surprisingly, 16 per cent of eighth grade boys were smoking and 12.5 per cent of the eighth grade girls had acquired the habit.

The authors acknowledge failure of their campaign to persuade adolescents not to smoke. Failure was attributed to various factors. During the period of the campaign, the tobacco industry had directed an intensive campaign at young people. Youth is influenced by teachers, clergymen, physicians and a large proportion of the adult population who smoke. According to the authors, parental example is the greatest influence. Thirty-seven per cent of the smoking students reported that both their parents smoked, and 46 per cent of the smoking students said that at least one of their parents smoked. Only 17 per cent of the student smokers had non-smoking parents.

As a result of their experience, the authors concluded that additional efforts must be directed at the younger, pre-adolescent age group, with the aim of deterring them from acquiring the smoking habit.

* Andrus, L. H., Hyde, D. F., and Fischer, E.: Smoking by high school students. CALIF. MED., **101**:246-247, (Oct.) 1964.

The Physician's Own Image

"Of little or no concern to the average, busy physician is the image he conveys to his patients." Thus begins an article by Mr. George W. Condit, of the Medical Business Bureau, New York City, in the November, 1964, issue of PHYSICIAN'S MANAGEMENT. His statement may be correct, since most doctors have more patients than they can care for as thoroughly as they think they should.

However, both for humanitarian reasons and because the average patient's attitude toward his doctor shapes his opinion of the medical profession, each physician *should* be concerned about his own image.

"Normally," Mr. Condit continues, "the physician does not give it a second thought if an individual patient fails to return for a year or so. He generally assumes—if he thinks about it at all—that the patient is healthy, rather than 'lost.'"

Mr. Condit quotes from a book by Dr. Richard H. Blum, THE MANAGEMENT OF THE DOCTOR-PATIENT RELATIONSHIP: "One way to encourage long-lost patients to reappear is to send out yearly reminders that it is time for their annual physical examination. Not only is it a good health hint, but it will let the doctor know which patients are still with him." If the doctor feels that the unauthorized issuance of such reminders would constitute the soliciting of patients, he can direct his secretary to ask each new patient, as he or she leaves, whether such a notice would be welcome, and to mark the chart accordingly.

Actually, the patient may *expect* his doctor to keep in contact with him. Mr. Condit cites a survey made by Mr. Ernest Dichter, for the California Medical Association, in which patients frequently complained that the doctor hadn't cared enough about them to find out whether the prescribed medicine had done any good.

Dr. Frank C. Coleman, M.D.

Upon learning of his imminent departure from Iowa to practice pathology in Tampa, Florida, the Board of Trustees of the Iowa Medical Society has addressed a letter to Dr. Frank C. Coleman, signed by all members of the Board.

The letter states in part: "Into the life of the Iowa Medical Society have come a few men whose broad sphere of knowledge has earned for them the high regard of their colleagues. The Society has turned, and rightly so, to these individuals for wisdom and sound judgment on matters encompassing the entire medical gamut.



Dr. F. C. Coleman (right) is shown receiving a letter of commendation from Dr. S. P. Leinbach, chairman of the IMS Board of Trustees.

"The name of Dr. Frank Coleman certainly belongs on the roster of this small fraternity. For nearly twenty years, Dr. Coleman, your sincere, willing and competent responses to countless requests have aided the Society most significantly in its constant effort to protect the health and best interests of the people of Iowa.

"Your participation in and beyond the medical community within the city of Des Moines, within the state of Iowa and in the national realm personifies the belief that a physician cannot, if he values this nation's standard of medical care, turn his back on the political, economic and social issues which bear upon the free destiny of this country."

In acknowledging his thanks to the Board of Trustees, Dr. Coleman has replied: "The opportunity to participate in the activities of the Iowa Medical Society has been one of the most satisfying things that has come my way in Iowa. Through this participation I have come to know and appreciate men who are devoting their best efforts to the interests of medicine."

Your editors might well take this occasion to enumerate many significant accomplishments of Dr. Coleman in his continuing, dedicated efforts to promote the good interests of organized medicine. However, the Board of Trustees seems to have stated the case adequately on behalf of all Iowa physicians fortunate enough to have worked with Dr. Coleman.

In joining the Board of Trustees and all members of the Iowa Medical Society in wishing him Godspeed, we would re-emphasize Dr. Coleman's departing thought that the opportunity to participate in the activities of one's medical society is a most satisfying experience. It is an experience which each and every one of us might profitably take the opportunity to enjoy.

Mr. Thomas A. Hendricks

IMS officers, present and past, and veteran members of the IMS staff were saddened to learn of the death, on November 4, of Mr. Thomas A. Hendricks. After having been a Davis Cup tennis star, he had served the medical profession successively as executive secretary of the Indiana Medical Association, as secretary to the AMA Council on Medical Service, and as assistant to the AMA's Dr. Ernest Howard. For the past year or two he had been an aide to the executive vice president of Continental Casualty Co. Just six weeks before his death, he had visited Des Moines for the IMS Fall Conference of County Medical Society Officers and Other Representatives.

President's Page



Standards of moral conduct and principle based on (1) God's will, (2) reason and (3) human nature are challenged by the moral relativist. He claims there is no God, reason is too much related to personal desire and custom, and human nature is too dependent upon social existence.

The experimental psychologist contends that the entire behavior of man, in common with all other animals, can be classified as either instinctive or conditioned; that there is nothing innate in man beyond the capacity to receive and to react to stimuli; and that his total desire is related to the experience of pleasure.

To make society workable, man's primitive, instinctive behavior is *conditioned* by a system of mores or customs which determines rightness or wrongness. Morality consists of those customs which the majority approve.

In western cultures, welfare for the needy is an established moral value. However, if society can be conditioned to the acceptance of welfare for one entire biological group, regardless of need, only a little more conditioning is required to promote welfare as a moral value for other groups and, eventually, for everyone.

Total government welfare as a form of security in any category makes for dependence on government, and this is *bondage*. The conditioners know this. But it would appear that those being conditioned are so blinded by the illusion of security that they fail to perceive the meaning of *bondage* which has no moral value in any society.

Otis D Wolfe

President

IMS Executive Council

OCTOBER 28, 1964

A statement developed by the three trustees and the president of the IMS and the executive committee of Iowa Medical Service (Blue Shield) was approved by the Executive Council, after having been approved by the Blue Shield Board of Directors on October 25. The full text will follow this report.

LEGISLATION

As recommended by the Executive Council in July, it was announced that the Committee on Legislation will encourage the appropriation of funds to enable the MAA program to continue on its present basis for the remainder of the biennium. As to the future of the program, and an adequate appropriation for the next biennium, the Committee plans to submit recommendations to the Executive Council later.

It was explained that MAA funds will be virtually exhausted in January, 1965, and that if the Interim Committee releases additional money, it is probable that the program can continue in its present form until April, 1965. It is not known whether the Board of Social Welfare has decided to ask the General Assembly for an emergency appropriation to continue the program until July, 1965, the end of the biennium.

A special study committee will be appointed to determine the future position of the IMS regarding services to be included under MAA, and the amount of appropriations required to provide those services. After a study has been completed, and after consultation with the Kerr-Mills Advisory Council and the Board of Social Welfare, and other groups, the IMS Committee will submit its recommendations for approval.

Health legislation to be introduced in the 1965 General Assembly may include revisions in the composition and functions of the State Board of Health, a change in the Hill-Burton Advisory Council to conform with new federal legislation.

REPORT OF THE JUDICIAL COUNCIL

Recommendations of the Judicial Council, following hearings and deliberations on charges brought by the IMS Grievance Committee against two physicians, were reviewed. The complaints were initiated by the Board of Social Welfare, and concerned services which they rendered to OAA recipients. No action by the Executive Council was required, since final authority on matters of this type rests with the Judicial Council.

The Executive Council approved the methods outlined for releasing the decrees of the Judicial Council to the physicians involved, to the Board of Social Welfare, to the press, and to the Grievance Committee and Board of Medical Examiners. The Judicial Council was commended for its handling of these cases.

DR. WALTER L. BIERRING MEMORIAL

A letter is being mailed to all members of the IMS soliciting contributions to the Walter L. Bierring Memorial Fund, stressing the fact that the memorial will be a part of the new headquarters office of the Society.

SOCIAL SECURITY DISABILITY EVALUATIONS

The executive Council approved a resolution to be submitted to the AMA House of Delegates in November, asking the AMA to request the HEW Department to stop requesting physicians to fill out disability application forms, and instead request the claimant to furnish all evidence to support his original claim of disability as the law actually requires.

AMA PUBLIC INFORMATION CAMPAIGN

The AMA's national educational program on health care for the aged, October 1-25, 1964, was reviewed. The AMA allocated funds to the IMS for placing ads in daily and weekly newspapers throughout the state. At least one newspaper in each Iowa county was utilized, and in the majority of instances the county medical society was identified as the sponsor. In a few instances, when no instructions had been received from the county society, the newspapers were instructed to use "Iowa Medical Society." A total of 133 ads were placed, including insertions in the Sunday, October 18, and Sunday, October 25, editions of the DES MOINES REGISTER, the DAVENPORT DEMOCRAT-TIMES, the CEDAR RAPIDS GAZETTE and the SIOUX CITY JOURNAL. Single ads were placed in five other Sunday papers in Iowa, in all of the other non-Sunday dailies, and in 91 weeklies. The total newspaper circulation was approximately 2,148,000.

To supplement this program, aproximately 12 Iowa counties requested additional ad mats for follow-up use, or for insertion in other county weeklies, and several taped radio spot announcements were also distributed. In addition, the IMS distributed approximately 3,000 posters and 85,000 informational pamphlets about proposed King-Anderson legislation and existing Kerr-Mills programs.

A 30-minute television program "Your Doctor Speaks—Again," featuring Dr. Edward Annis and columnist Bob Considine, was shown on Sunday, October 18, over WMT-TV, Cedar Rapids; KGLO-TV, Mason City; WOW-TV, Omaha; and WHBF-TV, Rock Island. The film may be used by KRNT-TV, Des Moines, in the near future, and a print is available for use by county medical societies.

Mr. Don Neumann, an IMS staff member, who coordinated all of the implementation of the program in Iowa, was commended for his outstanding work.

COUNTY RANGES OF FEES SURVEY

The chairman of the Usual and Customary Fee Survey Committee reported that several specialty groups had transmitted formal replies containing suggested procedures to be included in the survey, and that other specialty groups had made informal suggestions through representatives serving on the Committee. The Committee estimates that the survey will encompass more than 95 per cent of all procedures performed in the state.

The questionnaire to Iowa physicians will be mailed late in November, and doctors will be asked to return it no later than December 15.

It was stressed that the fee survey is being conducted for the purpose of formulating a county-by-county range of usual and customary fees for the most commonly performed medical procedures. The data will be retained by the IMS for use in negotiations with third parties, and for other uses which seem desirable. Only the procedures surveyed will be included in the final document.

IMS FALL CONFERENCE

It was announced that 155 physicians and guests attended the IMS Fall Conference for County Medical Society Officers and other Representatives, on September 13, 1964. A summary of the conference program was distributed, afterward, to all who had attended it, as well as to all who had been invited but could not be present. Copies were not provided to other IMS members, since county society presidents and deputy councilors had been encouraged to present oral reports at their local meetings.

IOWA MEDICAL FOUNDATION

A brochure on the Iowa Medical Foundation was recently mailed to all IMS members, and several physicians have already responded with financial contributions or pledges to the Foundation.

AREAWIDE HEALTH FACILITIES PLANNING

The Council was informed that at a recent meeting of the Committee on Medical Education and Hospitals, it was acknowledged that an area wide health facilities planning commission may be established in Iowa, and it was recommended that the IMS Committee on Legislation determine whether or not present Iowa law permits the establishment of such a commission, or if a change in the Iowa Code or Enabling Act is necessary. Further, it was suggested that the IMS should take steps to assure it of adequate representation on that commission if one is officially appointed.

Following the meeting of the ME&H Committee, it had been ascertained that Iowa law does permit the state to share in establishing and financing such a commission and further that such a commission may be established on a local basis. It is believed that efforts will be made to set up the first such commission in Polk County.

With reference to compulsory areawide health-facilities planning programs, it was reported that at its annual meeting, the AMA reiterated its policy of approving and encouraging participation and leadership in voluntary local community hospital planning, and in vigorously opposing the principle of compulsory areawide planning. Both the AMA and the IMS are alert to the problems of this sort. Representatives of the IMS were to attend the Conference on Areawide Health Facilities Planning, sponsored by the AMA, in Miami Beach on November 28-29.

IMS BUILDING PROGRAM

It was announced that final architectural plans for the new Society headquarters office, to be constructed at Tenth and Grand, in West Des Moines, will be submitted to the Building Committee on November 15.

U OF I SURVEY ON CORONARY-PRONE INDIVIDUALS

The Executive Council gave the endorsement of the IMS to a survey to be conducted in industry by two physicians at the U of I College of Medicine and aimed at identifying nutritional factors in "coronary-prone" individuals. It was reported that the proposed survey will include no element of patient care, and information obtained during the survey will be available to family physicians on request of the patient.

AMA INTERIM MEETING, NOV. 29-DEC. 3

A breakfast meeting for members of the Iowa delegation will be held in Miami Beach on December 1. The IMS will also serve as a co-host at a reception and delegates' dinner honoring Dr. Donovan Ward. The other sponsors include the Dade County (Florida) Medical Society, the Florida Medical Association, and the AMA.

JOINT STATEMENT

Executive Committee, Iowa Medical Service (Blue Shield) and Representatives, Board of Trustees, Iowa Medical Society

House of Delegates Actions—1964
IMS/Blue Shield Relations

To clarify the intent of the 1964 Iowa Medical Society House of Delegates when it recommended "that Iowa Medical Service (Blue Shield) turn to the Iowa Medical Society for guidance and approval" under four stipulated conditions, representatives of the Iowa Medical Society and Iowa Medical Service (Blue Shield) have agreed upon a declaration of intent. The action of the IMS House of Delegates has been interpreted as follows:

1. The House of Delegates has asked Iowa Medical Service (Blue Shield) to adopt a policy of seeking both guidance and approval of the Iowa Medical Society, and exhausting all reasonable means of doing so, prior to taking final action with respect to the following:

(1) When new contracts are being considered.

(2) When changes or new interpretations of existing contracts are contemplated.

(3) When changes are proposed regarding the philosophy and technique of paying claims.

(4) When information comes to light disclosing abuses of the Plan. (These should be referred to the appropriate grievance committee.)

In other words, obtaining Iowa Medical Society approval would not be mandatory, but seeking to obtain it would be.

It is understood that when the word *contracts* is used herein it refers to *subscriber certificates;* furthermore, that changes in the technique of paying claims, referred to in subparagraph No. 3 above, means claim payments which influence the relationship of physicians, subscribers, and Iowa Medical Service (Blue Shield).

2. If such approval of Iowa Medical Society cannot be obtained after all reasonable means of doing so have been exhausted and if Iowa Medical Service (Blue Shield) cannot then accommodate its position to that of the Iowa Medical Society, then Iowa Medical Service (Blue Shield) shall proceed as it believes it must. In this event, the Iowa Medical Society would evaluate its position, and proceed in accordance with its own best interest.

3. This policy should remain in effect indefinitely, but with the understanding that the Board of Directors of Iowa Medical Service (Blue Shield) would reserve the right to modify or cancel it in the future. However, any modification or cancellation shall be immediately communicated to the Iowa Medical Society, together with the reasons therefor.

4. It is understood that Iowa Medical Service (Blue Shield) and the Iowa Medical Society are separate legal entities and that the directors of the corporations have inviolable fiduciary relations to the corporations they serve, their members and, in the case of Iowa Medical Service (Blue Shield), its subscribers, and it is mutually understood that this agreement is not intended and shall not be construed to accomplish an intermingling of the corporations with the assumption of concurrent liabilities.

5. It is therefore recognized by both parties that an impasse could result on a specific issue, and Iowa Medical Service (Blue Shield) must legally make the final decision in accordance with Chapter 514, Code of Iowa, and the Articles and By-Laws of Iowa Medical Service (Blue Shield). Nevertheless, Iowa Medical Service (Blue Shield) offers its full cooperation to the Iowa Medical Society in every practicable and feasible way to carry out the wishes of the House of Delegates of the Iowa Medical Society.

The foregoing statement was agreed upon at a joint meeting of representatives of the Board of Trustees of the Iowa Medical Society, and the members of the Executive Committee of Iowa Medical Service (Blue Shield) on Monday, October 5, 1964.

CURE—the Questionable Word In Alcoholism

CHARLES A. CHURAN
Des Moines

THREE REPORTS of "cures" in the illness of alcoholism published within the past eight years have aroused the eager interest of the Iowa Commission on Alcoholism. Arthur H. Cain, New York psychologist and Ph.D., states in a recent SATURDAY EVENING POST article that 20 out of 50 alcoholic patients "have learned to drink normally, to use alcohol as a beverage, not as a psychological crutch." These cases he defines as "cures."

In the late 1950's Drs. Selzer and Holloway, of University of Michigan, reported 13 alcoholics who had been able to return to moderate drinking after treatment. Again, two years ago, the RUTGERS QUARTERLY JOURNAL OF STUDIES ON ALCOHOL reported that seven patients treated for alcoholism at Maudsley Hospital, London, had successfully returned to moderate drinking. A follow-up by the treating physician revealed that one of these patients, 11 years after hospital discharge, still consumed two or three pints of beer a day.

No serious student of alcoholism can ignore any report of progress in this enigmatic area of illness. Least of all, no one can dismiss these cases as incorrectly diagnosed. This Commission takes the view that any ray of light is better than the total darkness that has enshrouded alcoholism for so long. Assuming that all of the cases mentioned are, in fact, "cures" rather than arrestments, the total is a brave 40 out of an estimated 5 million alcoholics in the U. S. alone. Even this infinitesimal num-

Mr. Churan is executive director of the Iowa Commission on Alcoholism.

ber, no matter how unfavorably it compares, for instance, with the 300,000 individuals who compose the sober membership of Alcoholics Anonymous, cannot be dismissed. A psychological clue undoubtedly exists here and should be exhaustively investigated.

This Commission shies away from the word *cure* for many reasons. One is its finality. The medical profession shies away from the word for the same reason. Iowa State Health Commissioner Arthur P. Long, M.D., states that *cure* can be used positively only in specific cases. He cites appendectomy as an example of a cure. In this case, once the appendix has been removed, the patient can never again suffer from appendicitis. The treatment is final.

The Commission shies away from *cure* in alcoholism because it pre-supposes correct diagnosis. In alcoholism, diagnosis is extremely difficult. As yet, no one has successfully defined alcoholism. The treating doctor rarely knows for certain how far the illness has progressed. The borderline between social and compulsive drinking is vague. Thousands of drinkers fall into what is known as the "gray" area where diagnosis is impossible. So far, the doctor can only play it safe and diagnose alcoholism as a symptom. From then on, it may be the job of psychotherapy—psychology, psychiatry even psychoanalysis—to come to terms with the exact nature of the illness. To our knowledge, psychiatrists are treating the malady in this manner.

The Commission avoids the word *cure* because it does suggest that the patient can return to social drinking. Here, we are tempted to ask, "Why should he want to?" In our experience the compulsive drinker, the alcoholic, has no use for social drinking. He never had. He drank, not to become merely convivial, but to get "high" on alcohol. He drank to escape reality, inadequacy, insecurity. Normal drinking never helped him to do this. It cannot. His emotional disturbance is too deep. One or two drinks can never give him the sedative effect he seeks. If *cure* means moderate drinking, it is a benefit that no alcoholic wants. Two or three pints of beer a day are laughable to a compulsive drinker. He, himself, asks, "Why should I want to 'return' to a pattern I never followed?"

Fortunately, *cure* in alcoholism means no such thing. To the psychologist, cure means the removal of the compulsion to drink. To cite the ability to drink socially as an example of a cure is dangerously to confuse the alcohol addict and the nature of his malady. Would a heroin addict be cured if he could use the hypo now and then? We think not. At a social gathering of arrested heroin addicts, could we safely pass a tray of needles? We think not. Obviously, a tray of martinis at a party of arrested alcohol addicts would present the same risk. Or a tray of beer.

Moreover, if we use *cure* in regard to alcoholism, we immediately suggest that vigilance can be relaxed. Which patient among the "cured" is sure that his emotional appendix has been removed? Does the psychiatrist prescribe a dry period of a given length? What of the physical aspect of the illness? The Rutgers School of Alcohol Studies suggests that a physical allergy exists in the diagnosed alcoholic. For some undetermined reason, the alcoholic's body cannot handle alcohol as readily as the non-alcoholic's body. This may be an enzyme deficiency. Or amino acids perhaps are not present in quantity. Or there is liver damage. Whatever the reason, one drink may trigger the compulsion to go on drinking. Experience has shown that this regression can take place after ten, fifteen or twenty years of abstinence. That, in fact, is the glaring symptom of the illness.

Finally, this Commission has no quarrel with Alcoholics Anonymous over whether the word *cure* should, or should not, be used. In fact, AA has more reasons to avoid it than the Commission has. In step one of that fellowship's program, the alcoholic admits that he is powerless over alcohol. He admits this powerlessness in much the same way as most of us would admit that we are powerless against potassium cyanide or battery acid. The conclusion is accepted. Powerlessness is thus established. The compulsive drinker, powerless against alcohol yesterday, is also powerless against it today. Tomorrow does not concern him. If *cure*, in Cain's definition, means a return to social drinking, then the AA member can, though powerless over alcohol, drink alcohol. This is irrational. Therefore, *cure* is incompatible with Alcoholics Anonymous.

We have 45,000 alcoholics in Iowa. The primary concern of this Commission, the psychiatrist, the doctor and the AA member is to help the sufferer find sobriety and keep it. That is the healing we seek.

Alcoholism

John Clancy, M.D., Psychopathic Hospital, State University of Iowa, has published an article, "Motivation Conflicts of the Alcoholic Addict," in the QUARTERLY JOURNAL OF STUDIES ON ALCOHOL (Rutgers) for September, 1964, which outlines the rationale behind the treatment currently used with some success at that hospital in Iowa City.* Dr. Clancy discusses various treatment modalities —conditioned aversion, alcohol-reaction-causing drugs (disulfiram), psychotherapy and Alcoholics Anonymous—in terms of his equation: "Any drinking *equals* excessive drinking *equals* alcoholism."

If the addict will accept this formula, he is a prime candidate for treatment. The alcoholic can accomplish this successfully *before* catastrophe overtakes him, but afterwards a program must be devised to maintain abstinence by continuing his need for abstinence, his need for pleasure over pain and his need for the happy benefits of the sober life over the drinking life.

* Copies are available without charge from the Iowa State Commission on Alcoholism, State Office Building, Des Moines, Iowa.

THE JOURNAL *Book Shelf*



BOOK REVIEWS

CLINICAL NEUROLOGY, by *Frank A. Elliott,* M.D. (Philadelphia, W. B. Saunders Co., 1964. $12.50).

A well written and easy reading neurologic text is offered by Dr. Elliott, professor of clinical neurology at the University of Pennsylvania School of Medicine. The author states that he intends this outline for students and residents. I should like also to recommend it as a concise and authoritative reference work for practitioners of general medicine.

One should not expect an in-depth exposition of any particular neurologic subject in a volume 688 pages long, and multi-volume sets on detailed clinical neurology are available elsewhere. However, this text is remarkably complete, and with its lucid and uncluttered style, it is a pleasure to read.

This is a worthwhile addition to your medical library. —*J. T. Bakody,* M.D.

MILESTONES IN NUTRITION, VOLUME 2 OF AN ANTHOLOGY OF FOOD SCIENCE, ed. by *Samuel A. Goldblith,* Ph.D., and *Maynard A. Joslyn,* Ph.D. (Westport, Connecticut, The Avi Publishing Company, 1964. $14.25).

This is a one-volume collection of reprinted papers of interest to students of food and nutrition. The reports recorded important steps in the growth of knowledge on those subjects. A history of metabolism by Graham Lusk introduces the reader to the subject matter, and following it are papers dealing with such topics as the necessity for certain lipids in the diet during growth (originally published in 1913), on the synthesis of vitamin B (1937), on the chemical value of vitamin C (1932), and on nutritional anemia associated with whole-milk diets (1925). From the dates of the various papers it is evident that for the medical profession these articles can have only historic interest. —*M. E. Alberts,* M.D.

EMERGENCY TTEATMENT AND MANAGEMENT, THIRD EDITION, by *Thomas Flint, Jr.,* M.D. (Philadelphia, W. B. Saunders Company, 1964. $8.75).

This flexible-cover, slightly larger than pocket-size book covers the subject of emergencies from abuse of emergency facilities to testimony in court. The subject matter, presented in outline form, is divided into three broad sections: (1) general medical principles and procedures; (2) emergency treatment of specific conditions; and (3) administrative, clerical and medicolegal principles and procedures. The subjects are presented in a brief, concise fashion. The index is complete.

This manual should be valuable in any emergency room—industrial or hospital.—*M. E. Alberts,* M.D.

PROTEINS AND THEIR REACTIONS, by *H. W. Schultz,* Ph.D., and *A. F. Anglemier,* Ph.D. (Westport, Connecticut, The Avi Publishing Co., Inc. $3.00).

This report on a conference on foods is one of a series from Oregon State University. Several papers are presented regarding the structure and properties of proteins, protein interaction and degradation, the major protein systems and factors affecting them, and the biologic effects of protein interactions. They are excellent, but their value is limited to those scientists who are interested in food chemistry. Previously presented symposia, for example, concerned enzymes and lipids.

Only a small percentage of physicians would have an interest in this volume, except for selected ones of the papers, such as a paper on food allergies and another on nutritive aspects.—*M. E. Alberts,* M.D.

DYNAMIC PATHOLOGY, by *Maurice M. Black,* M.D., and *Bernard M. Wagner,* M.D. (St. Louis, The C. V. Mosby Company, 1964. $8.00).

The authors of this 292-page volume have attempted to impart a "sense of beauty and excitement which should be engendered by the study and practice of medicine" through emphasizing the "dynamic continuity of biological function in health and disease."

The result of their efforts is an excellent, concise description of integral relationships among many fundamental disease phenomena. The authors have purposely avoided discussions of minutiae of pathologic processes. Their sparing use of illustrations does not detract from the value of the book, for their verbal pictures sustain the reader's interest.

This book is recommended to physicians as an excellent vehicle for orientation in the field of pathology as it relates to the practice of clinical medicine.—*R. F. Birge,* M.D.

BOOKS RECEIVED

DOCTOR'S EASACCOUNT RECORD SYSTEM—DISBURSEMENTS, INCOME (Philadelphia, W. B. Saunders Co., 1964, $9.50 (set); Disbursements—$4.00, Income—$5.50)

CLINICAL NEUROLOGY, by *Frank A. Elliott,* M.D., F.R.C.P. (Philadelphia, W. B. Saunders Co., 1964, $12.50)

BODY FLUIDS AND THE ACID-BASE BALANCE, by *Halvor N. Christensen,* Ph.D. (Philadelphia, W. B. Saunders Co., 1964, $6.50)

PAIN IN THE CHEST, by *William H. Wehrmacher,* M.D., F.A.C.P., F.A.C.C. (Springfield, Illinois, Charles C Thomas Publishers, 1964, $14.00)

PEDIATRIC PROCEDURES, by *Walter T. Hughes, Jr.*, M.D. (Philadelphia, W. B. Saunders Co., 1964, $7.50)

BRAIN-THYROID RELATIONSHIPS—Ciba Foundation Study Group No. 18 (Boston, Little, Brown & Co., 1964, $1.95)

AETIOLOGY OF DIABETES MELLITUS AND ITS COMPLICATIONS—Ciba Foundation Colloquia on Endocrinology, Vol. XV (Boston, Little, Brown & Co., 1964, $12.50)

PROGRESS IN NEUROLOGY AND PSYCHIATRY, Vol. XIX, by *E. A. Spiegel*, M.D. (New York, Grune & Stratton, 1964, $14.75)

COMMON BACTERIAL INFECTIONS—PATHOPHYSIOLOGY AND CLINICAL MANAGEMENT, by *Edwin J. Pulaski*, Colonel, MC, U. S. Army (Philadelphia, W. B. Saunders Co., 1964, $8.50)

SCINTILLATION SCANNING IN CLINICAL MEDICINE, edited by *James L. Quinn, III*, M.D. (Philadelphia, W. B. Saunders Co., 1964, $11.50)

THE VISUAL FIELDS—A TEXTBOOK AND ATLAS OF CLINICAL PERIMETRY, SECOND EDITION, by *David O. Harrington*, M.D., F.A.C.S. (St. Louis, C. V. Mosby Co., 1964, $16.00)

SURGERY OF THE BREAST, by *Louis H. Jorstad*, M.D., F.A.C.S., F.I.C.S., and *Meredith Jorstad Payne*, M.D., F.A.C.S. (St. Louis, C. V. Mosby Co., 1964, $15.00)

MODERN TREATMENT, Vol. I, No. 5, TREATMENT OF EPILEPSY, by *Russell N. DeJong*, M.D., and TREATMENT OF ARTHRITIS, by *Carl M. Pearson*, M.D. (New York, Assn. of American Medical Book Publishers, 1964, $16.00 per year)

PANCREATIC INFLAMMATORY DISEASE—A PHYSIOLOGIC APPROACH, by *David A. Dreiling*, M.D., *Henry D. Janowitz*, M.D., and *Claude V. Perrier*, M.D. (New York, Hoeber Medical Div., Harper & Row, Publishers, 1964, $10.50)

RESPIRATORY FUNCTION IN DISEASE, AN INTRODUCTION TO THE INTEGRATED STUDY OF THE LUNG, by *David V. Bates*, M.D., M.R.C.P., and *Ronald V. Christie*, M.D., M.Sc., D.Sc., Sc.D., F.A.C.P., F.R.C.P. (Philadelphia, W. B. Saunders Co., 1964, $15.50)

EXPERIENCE IN RENAL TRANSPLANTATION, by *Thomas E. Starzl*, Ph.D., M.D. (Philadelphia, W. B. Saunders Company, 1964, $17.00)

A Community Approach to Mental Health

In a news release issued by the AMA prior to its Second National Congress on Mental Health, held in Chicago early in November, a rather detailed sketch was provided of the San Mateo County (California) Mental Health Services. The objective of the Congress, according to Dana Farnsworth, M.D., of Cambridge, Massachusetts, chairman of the conference, was to persuade physicians throughout the nation to organize similar projects.

San Mateo County has supplied services that large, specialized institutions can't furnish—a complex of emergency, inpatient, outpatient and counseling services based in and around a general hospital.

H. D. Chope, M.D., San Mateo County's director of public health, thinks that spreading the word about mental illness is one of the essential ingredients of community care. "We have a professional staff of 99—psychiatrists, psychologists, social workers, nurses and various other therapists" he says, "and 40 per cent of our staff time is devoted to other than direct patient care." Much of this time is spent in advising and counseling people who deal with other people—police, probationary and juvenile authorities, private physicians, operators of nursing homes, clergymen and school administrators. Results of this work are two-fold. People in need of psychiatric help who can't afford it through regular medical channels are directed to the center early. And the earlier they get help, the better are their chances of recovery.

Joseph J. Downing, M.D., program chief for community health services under Dr. Chope, was quoted as follows: "For example, by sending psychiatrists on visits to nursing homes, we've been able to cut down on admissions of old people from these homes by 65 per cent." Of the work with police officers, he said, "Police have come to know that many of the people with whom they deal may be mentally ill, not criminals. So our police don't apply tranquilizers with billy clubs. If they have doubts about a person, they bring him to us."

The 1960 population of San Mateo County was about 444,000, and the report stated that on the average of once every three hours, day and night, a mental patient—more often than not a potential suicide—presents himself at the hospital there.

More than half of the 3,000 psychiatric emergencies each year never see the inside of a psychiatric ward. The fact that these people need help, Dr. Chope maintains, doesn't mean that they have to be hospitalized. Treatment for stay-at-home patients is provided either at regular clinic sessions or at what is known as the "day center." When not attending these meetings, patients go about their regular living patterns.

There is nothing harrowing about the experiences of patients who are hospitalized, according to the report. The new arrival isn't stripped of his belt, shoe-strings, matches, etc., and then locked up, and because each patient is given individual attention, none of them ever goes AWOL. Children are allowed as visitors to the psychiatric ward, though they aren't permitted elsewhere in the hospital.

In such an atmosphere, the average patient's stay is only eight days. Thereafter, he attends sessions at the day center. About 15 per cent of psychiatric patients have to be transferred to the state mental hospital for long-term care, but even there they are housed with other people from their home community, are taken shopping by volunteers of the San Mateo County Mental Health Association, and they continue to see members of the San Mateo mental health center staff. The discharge rate from the San Mateo wards is well above that of the other wards.

Dr. Downing believes that much of his organization's success is due to "continuity of care." At San Mateo, he explains, a bond of trust is established between patient and psychiatrist through

frequent contacts. Thus the patient gains faith that he can be and is being helped. At many public institutions, contrastingly, a patient may be seen by a different psychiatrist on every visit. Thus some of the concepts of private practice are applied to public practice in San Mateo.

Of course patient care costs more under such an arrangement than it does at a state mental hospital—$38.25 per patient day, as compared with $6.20. But San Mateo provides one psychiatrist for every five patients, whereas the state provides one for every 300. For individuals with good short-term prognoses, however, the greater cost is fully justified, from both financial and humanitarian standpoints. Under California law, the state pays 75 per cent of the center's costs, and the county pays as much of the remainder as patients fail to meet.

The services of the center are many. If needed, they include home visits before a patient begins the care program, and job-training afterward. They include group and family therapy, child guidance and, on occasion, foster-home placement.

Symposium on Vascular Diseases

The American Therapeutic Society and the American Heart Association will cosponsor the second annual symposium for physicians on Therapy of Cerebral Vascular and Peripheral Vascular Diseases on January 9-10, 1965, at the Radisson Hotel, in Minneapolis.

The Saturday morning program, beginning at 9:00, will concern cerebrovascular disease and will include presentations by A. B. Baker, M.D., director of the Division of Neurology, University of Minnesota Medical School; C. H. Millikan, M.D., professor of neurology at the Mayo Graduate School of the U of M; and Charles Rob, M.D., chairman of the Department of Surgery at the University of Rochester (New York); and a panel discussion. The Saturday afternoon program will concern peripheral vascular disease and will include lectures by Ray W. Gifford, Jr., M.D., of the Cleveland Clinic Foundation; Philip E. Bernatz, M.D., consultant in surgery at the Mayo Clinic; and Dr. Rob; and a panel discussion. The Sunday morning program will include a presentation on pulmonary embolism by David C. Sabiston, Jr., M.D., chairman of the Department of Surgery at Duke University, one on atherosclerosis by Ivan Frantz, Jr., M.D., a research professor in the Departments of Medicine and Biochemistry at the University of Minnesota, and a clinical pathologic conference.

The symposium is being financed, in part, by E. R. Squibb & Sons, Inc., a division of the Olin-Mathieson Chemical Company. It has been accepted for a maximum of 8½ credits by the American Academy of General Practice.

Obstetrics and Gynecology

A postgraduate conference on obstetrics and gynecology will be held at the S.U.I. College of Medicine, in Iowa City, on Tuesday and Wednesday, January 26 and 27, 1965, under the sponsorship of the S.U.I. Department of Obstetrics & Gynecology, the Iowa Obstetrical and Gynecological Society, and the Division of Maternal and Child Health of the State Department of Health. The registration fee will be $20, and the program is accredited for 10½ hours by the American Academy of General Practice.

Tuesday Afternoon

1:30 SYMPOSIUM ON URINARY STRESS INCONTINENCE

"Pathophysiology and Diagnostic Tests"—C. Paul Hodgkinson, M.D., chairman of obstetrics and gynecology, Henry Ford Hospital, Detroit

"Urologic Factors"—Rubin H. Flocks, M.D.

"Fundamentals of Treatment"—Andrew A. Marchetti, M.D., head of obstetrics and gynecology, Georgetown University

GENERAL DISCUSSION

3:15 SYMPOSIUM ON ADVANCED GENITAL MALIGNANCY

"Palliative Management of Patients With Gynecologic Cancer"—William J. McGanity, M.D., chairman of obstetrics and gynecology, University of Texas, Galveston

"Prolonged Perfusion of the Internal Iliac Arteries for Advanced Pelvic Malignancy"—Dr. Hodgkinson

"Pain Palliation by Nerve Block"—Leo J. De Backer, M.D.

Wednesday Morning

9:00 SYMPOSIUM ON LABOR PROBLEMS

"Significance of Fetal Stress and Distress"—Dr. McGanity

"Fetal Heart Rate Alteration in Normal and Abnormal Labor"—Richard W. Stander, M.D., associate professor of obstetrics and gynecology, Indiana University

"Is Prematurity a Problem in Iowa?"—Madelene M. Donnelly, M.D.

DISCUSSION

Wednesday Afternoon

1:30 "Review of Departmental Activities"—Wm. C. Keettel, M.D.

2:00 "Fibrinogen—Fibrin Conversion Syndrome"—Dr. Hodgkinson

2:30 "Which Rh-Sensitized Patient Should Be Selected for Preterm Delivery?"—Dr. Stander

3:00 DISCUSSION

3:30 "Management of Prolapse in the Poor-Risk Patient"—Dr. Marchetti

4:00 CLINICAL PATHOLOGIC CONFERENCE: Case of Amniotic Fluid Embolus

Iowa Chapter of the American Academy of General Practice

The Program of the Iowa Chapter of the AAGP for 1965

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Des Moines, Iowa 50309

MEMBERSHIP

ACTIVE	584
ASSOCIATE	92
INACTIVE	21
TOTAL	697

94 COUNTIES REPRESENTED

MEETINGS

FEBRUARY—Iowa City, Iowa
THE REFRESHER COURSE
(The Best Course in the Middle West)
Annual Banquet for Medical Students & Faculty

APRIL—San Francisco, Calif.
THE AMERICAN ACADEMY OF GENERAL PRACTICE ANNUAL with the new innovation

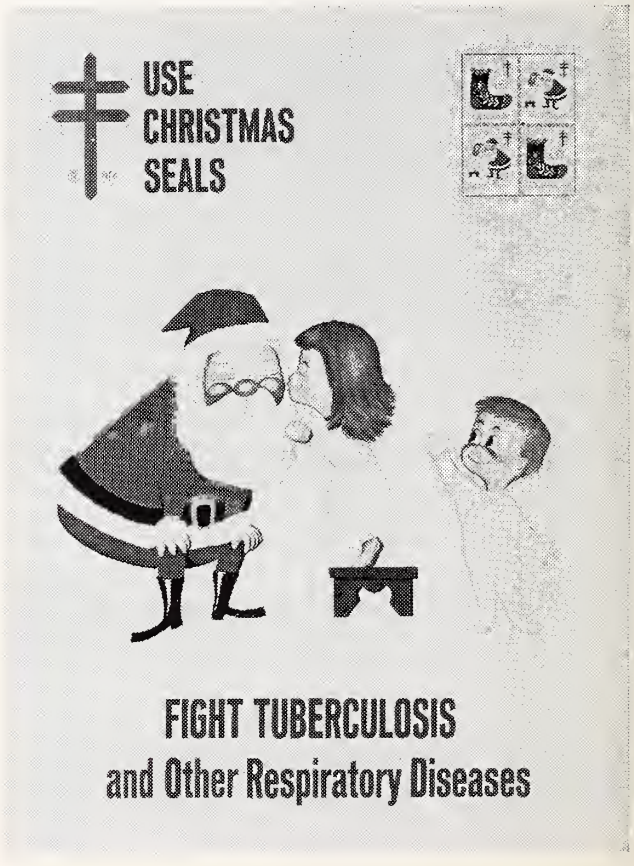
MAY—Denison, Iowa
LILLY SEMINAR

JUNE—Okoboji, Iowa
THE SPRING POSTGRADUATE CONFERENCE
Fun and Education

SEPTEMBER—Des Moines, Iowa
OUR 17TH ANNUAL MEETING
"Glamour and Pearls"

GOALS

1. Increases in our membership.
2. Closer cooperation with the University of Iowa Medical School for postgraduate education.
3. Yearly improvement in stimulating meetings with all the Public Relations methods that are necessary.
4. Improved relations with all allied Medical Societies.



Iowa Association of Medical Assistants

Medicare Under Social Security Is Not Inevitable

Since the recent election, news commentators have been saying that with a new crop of Congressmen, some of President Kennedy's and President Johnson's proposals will be passed easily. We don't claim to know more than the commentators, but we are certain that each of us has a voice in our government—if he or she chooses to use it.

Even after a "landslide" election, each senator and representative is greatly in doubt about the wishes of citizens in his state or district regarding specific issues and projects. He can learn your views only if you write to him. HAVE YOU DONE THIS?

From time to time, in the past four years, we have appealed to you to write your senators and congressman to tell them that you do not favor including "Medicare" under the Social Security Act, and asking you to give such reasons as:

1. Such a program is actuarially unsound.
2. The Kerr-Mills Act provides benefits for those in need.
3. This type of program should be administered on a local level, through existing agencies.
4. The majority of persons over 65 do not need assistance.
5. Our senior citizens want and deserve their independence.

Dr. George H. Scanlon, a past-president of the Iowa Medical Society, speaking recently at the Political Science Discussion Club on the S.U.I. campus, said it is remarkable to him that "Medicare" remains a fervent national issue at a time when 60 per cent of our elderly citizens have voluntary health insurance, and when health care is already available to everyone over 65 who cannot pay for it. About 43 states have already implemented the Kerr-Mills program, and in Iowa approximately $8 million has been spent on Medical Aid to the Aged since December, 1963. He also said that polls show that public sentiment, which once strongly favored "Medicare," now opposes the plan. He attributed this shift to the distribution of factual information by the American Medical Association.

"In countries that have gone socialistic," Dr. Scanlon reminded his audience, "medicine has been the first field to be taken over. . . . The American medical profession leads the world in education and research, as well as in services. . . . You can't get the medical care you get in America anywhere else in the world."

Perhaps shock treatment—questions aimed at you, as an individual—will be the best way to arouse you to action. Do you want to live and work in a welfare state? Do you want your Social Security tax deduction to be multiplied without your being given any assurance that the funds you have been promised will be ready for you when you retire? Do you favor the destruction of the free-enterprise system? At your job, would you welcome the torrent of government forms that "Medicare" would necessitate?

If your answer to each of these questions is "Yes," then just sit back and wait. If your answer is "No," it's time for you to go into action. Now, when newly-elected congressmen are getting ready to assume office, is the time for you to present your views—to ask your representative to use his influence and to vote against this type of legislation which would lead us inexorably down the path to socialism.

Remember that you, the medical assistant, won't be the only one affected. Your employer has to match every cent that is withheld from your salary for Social Security, and he gets no benefit from it. Urge him to write or wire to his congressman, too.

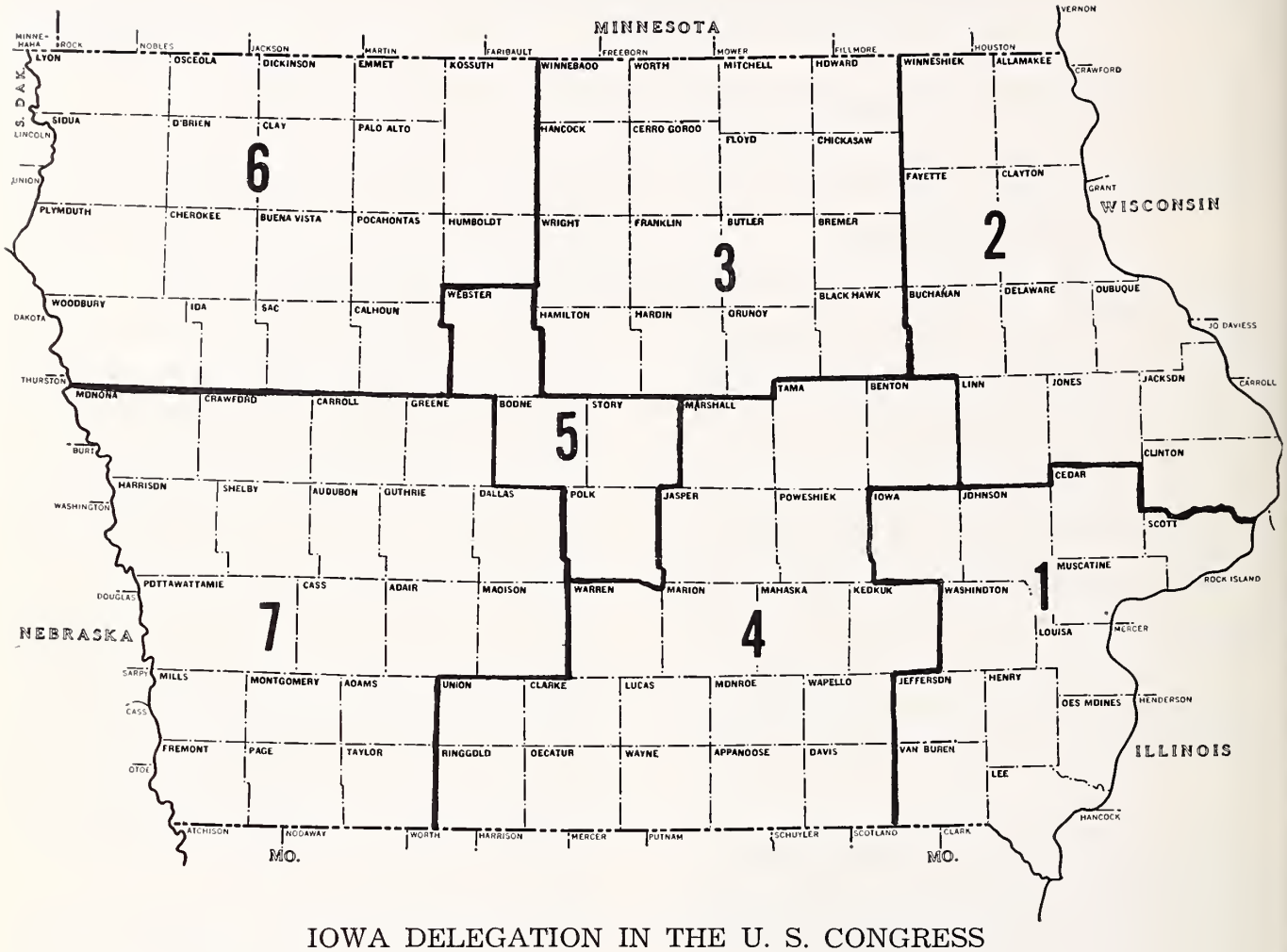
A personal letter bears more weight than a letter from an organization, for it expresses the view of an individual voter.

An excellent film featuring Bob Considine and Dr. Edward Annis entitled "Is This What Grandma Wants?" is available through the Iowa Medical Society or the chairman of the legislative committee of your local medical society. We suggest that you make arrangements to see it.

Anyway, write to your congressman. State your request simply, and give your reasons in your own words. And don't forget to thank him for representing you. Running for office is a financially hazardous and physically strenuous undertaking that very few of us are willing to attempt. Regardless of party affiliation, the men and women who have succeeded at it deserve our praise and our thanks.

HELEN G. HUGHES

Congressional Districts



IOWA DELEGATION IN THE U. S. CONGRESS

Senators

Bourke B. Hickenlooper (R), Cedar Rapids

Jack R. Miller (R), Sioux City

Representatives

District 1. John Schmidhauser (D), Iowa City

District 2. John C. Culver (D), Marion

District 3. H. R. Gross (R), Waterloo

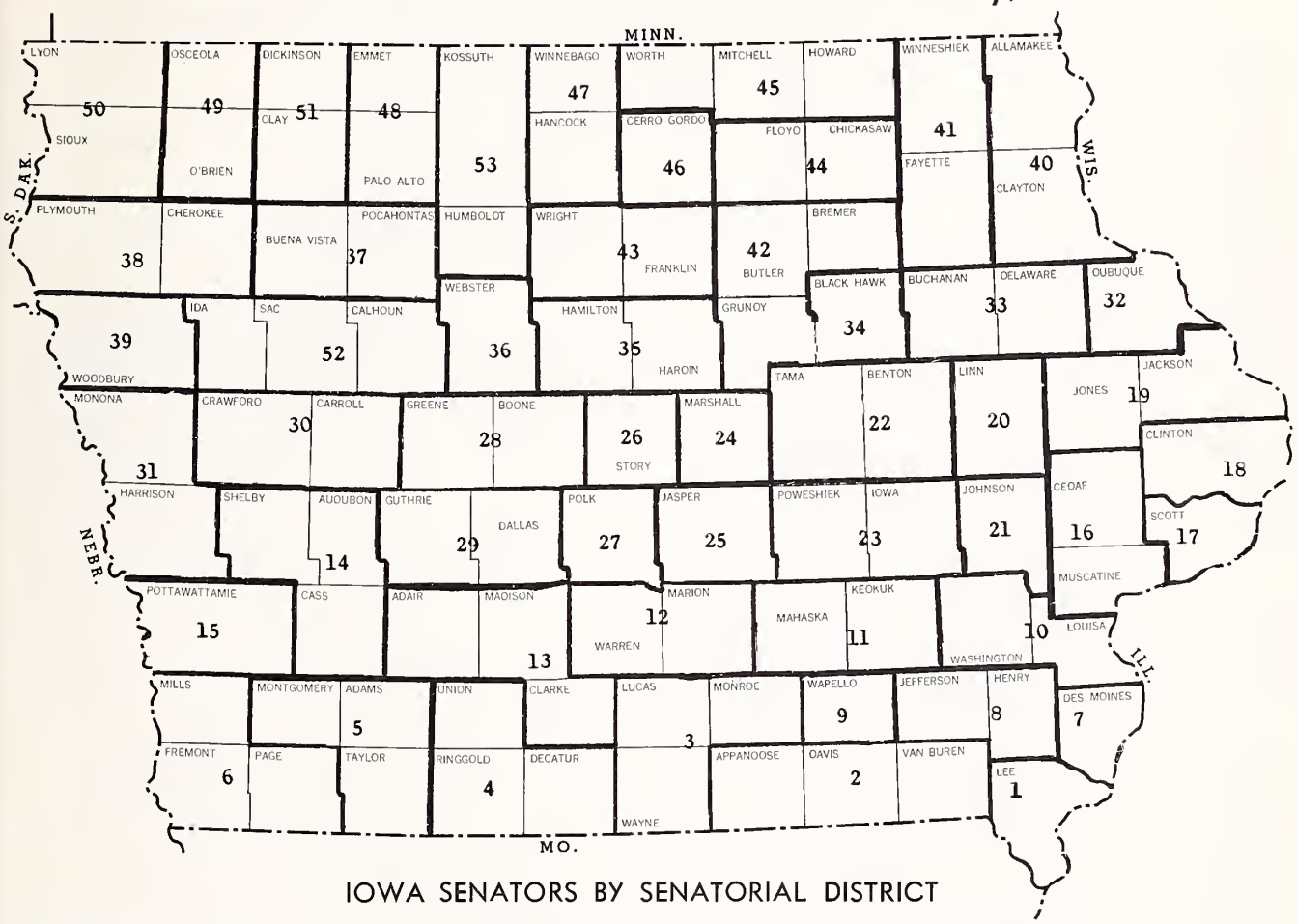
District 4. Bert Bandstra (D), Pella

District 5. Neal E. Smith (D), Altoona

District 6. Stanley L. Greigg (D), Sioux City

District 7. John R. Hansen (D), Manning

Senatorial Districts in the Iowa General Assembly, 1965



IOWA SENATORS BY SENATORIAL DISTRICT

First District
Seeley G. Lodwick (R) Wever (H)
Second District
Max E. Reno (D) Bonaparte
Third District
Don S. McGill (D) Melrose
Fourth District
Franklin S. Main (D) Lamoni
Fifth District
James E. Briles (R) Corning
Sixth District
Verne Lisle (R) Clarinda (H)
Seventh District
Robert R. Dodds (D) Danville (H)
Eighth District
Clifford M. Vance (R) Mt. Pleasant (H)
Ninth District
Jake B. Mincks (D) Ottumwa (H)
Tenth District
Richard L. Stephens (R) Ainsworth (H)
Eleventh District
Bass Van Gilst (D) Oskaloosa
Twelfth District
Stanley M. Heaberlin (D) Pleasantville
Thirteenth District
Joseph B. Flatt (R) Winterset (H)
Fourteenth District
John D. Shoeman (R) Atlantic (H)
Fifteenth District
Gilbert E. Klefstad (D) Council Bluffs
Sixteenth District
David Stanley (R) Muscatine (2)
Seventeenth District
Joseph W. Cassidy (D) Walcott
Jack Schroeder (R) Davenport (H)
Eighteenth District
David O. Shaff (R) Clinton (H)

(H)—Holdover from 1963
(Term expires 1966)
(R)—Republican
(D)—Democrat
(2) —Term expires in 1966

Nineteenth District
Howard Tabor (D) Baldwin (2)
Twentieth District
John M. Ely, Jr. (D) Cedar Rapids
Tom Riley (R) Cedar Rapids (2)
Twenty-first District
Robert J. Burns (D) Oxford
Twenty-second District
R. O. Burrows (R) Belle Plaine (H)
Twenty-third District
Kenneth Benda (R) Hartwick (H)
Twenty-fourth District
Max Milo Mills (R) Marshalltown
Twenty-fifth District
Eugene M. Hill (D) Newton (H)
Twenty-sixth District
Daryl H. Nims (D) Ames (2)
Twenty-seventh District
Howard C. Reppert, Jr. (D) Des Moines
William E. Denman (D) Des Moines (2)
George E. O'Malley (D) Des Moines (H)
Twenty-eighth District
Warren J. Kruck (D) Boone
Twenty-ninth District
Alan Shirley (D) Perry
Thirtieth District
Peter F. Hansen (D) Manning (H)
Thirty-first District
Charles F. Griffin (R) Mapleton (H)
Thirty-second District
Andrew G. Frommelt (D) Dubuque (H)
Thirty-third District
John W. Patton (D) Aurora
Thirty-fourth District
Gene F. Condon (D) Waterloo
Francis L. Messerly (R) Finchford
Thirty-fifth District
John A. Walker (R) Williams (H)

Thirty-sixth District
C. Joseph Coleman (D) Clare
Thirty-seventh District
Donald G. Beneke (R) Laurens (H)
Thirty-eighth District
J. Henry Lucken (R) LeMars (H)
Thirty-ninth District
Vincent S. Burke (D) Sioux City
James M. McNally (D) Sioux City (2)
Fortieth District
Adolph W. Elvers (D) Elkader
Forty-first District
H. L. Heying (D) West Union
Forty-second District
Vernon H. Kyhl (R) Parkersburg
Forty-third District
R. W. Hagie (R) Clarion (2)
Forty-fourth District
Robert R. Rigler (R) New Hampton (H)
Forty-fifth District
Leo Elthon (R) Fertile (H)
Forty-sixth District
Delbert Floy (D) Thornton
Forty-seventh District
John L. Buren (D) Forest City
Forty-eighth District
John P. Kibbie (D) Emmetsburg
Forty-ninth District
H. Kenneth Nurse (D) Hartley
Fiftieth District
Lucas J. De Koster (R) Hull
Fifty-first District
Merle W. Hagedorn (D) Royal
Fifty-second District
Elmer F. Lange (R) Sac City (2)
Fifty-third District
Donald W. Murray (D) Bancroft

IOWA HOUSE MEMBERS

Adair
C. D. Seibert (D) St. Charles

Adams
Conrad Ossian (R) Red Oak*

Allamakee
Thomas S. Roe (D) Waukon

Appanoose
Ross S. Whisler (D) Centerville

Audubon
Kenneth Robinson (D) Bayard

Benton
Charles E. Hutchins (D) Belle Plaine

Black Hawk
Mrs. Gertrude S. Cohen (D) Waterloo
James V. Gallagher (D) Waterloo
Charles Uban (D) Waterloo
William P. Wilson (D) Cedar Falls
James H. Jackson (D) Waterloo

Boone
Donald Baker (D) Boone

Bremer
Henry W. Busch (R) Waverly*

Buchanan
R. P. Harrington (D) Independence

Buena Vista
John S. Miller (D) Storm Lake

Butler
Charles E. Grassley (R) New Hartford*

Calhoun
William P. Winkelman (R) Lohrville*

Carroll
Bernard J. Murphy (D) Carroll*

Cass
Lester Kluever (R) Atlantic*

Cedar
LaMar Foster, Sr. (D) West Branch

Cerro Gordo
R. J. Clapsaddle (D) Mason City
Olga Doran Wolcott (D) Rockwell

Cherokee
Harold V. Nelson (R) Aurelia

Chickasaw
Vince Steffen (D) New Hampton*

Clarke
Harry Madden (D) Kent

Clay
W. R. Gillette (D) Spencer

Clayton
Dale L. Tieden (R) Garnavillo

Clinton
Lloyd G. Jackson (D) Clinton
Charles G. Varney (D) Clinton

Crawford
Harold J. Houston (D) Dow City

Dallas
Marvin S. Shirley (D) Minburn

Davis
(See Appanoose)

Delaware
James E. Patton (R) Manchester*

Decatur
Arlo Hullinger (D) Leon

Des Moines
Milton Distelhorst (D) Burlington
Charles P. Miller (D) Burlington*

Dickinson
(See Clay)

Dubuque
Alfred P. Breitbach, Sr. (D) Farley*
John L. Duffy (D) Dubuque*
Arnold Utzig (D) Dubuque

Emmet
Niels J. Nielson (D) Ringsted*

Fayette
Maurice E. Baringer (R) Oelwein*

Floyd
A. Rae Melrose (D) Charles City

Franklin
Floyd P. Edgington, Sr. (R) Sheffield*

Fremont
William J. Scherle (R) Henderson*

Greene
C. Raymond Fisher (R) Grand Junction

Grundy
Harold O. Fischer (R) Wellsburg*

Guthrie
(See Audubon)

Hamilton
Edward Busing (D) Stanhope

Hancock
Victor C. Stueland (D) Kanawha

Hardin
Robert W. Oehlsen (D) Radcliffe

Harrison
Charles A. Korn (D) Logan

Henry
Charles F. Strothman (R) New London*

Howard
M. Ross Stevenson (D) Lime Springs*

Humboldt
Theodore M. Gleason (D) Gilmore City

Ida
J. Wesley Graham (R) Ida Grove

Iowa
William J. Coffman (R) North English*

Jackson
Paul E. Kempter (D) Bellevue

Jasper
Wayne J. Fullmer (D) Newton
William J. Gannon (D) Mingo

Jefferson
Floyd H. Millen (R) Farmington*

Johnson
Minnette Doderer (D) Iowa City*
Bruce Mahan (D) Iowa City*

Jones
John Holmes (D) Wyoming

Keokuk
Keith H. Dunton (D) Thornburg*

Kossuth
Casey Loss (D) Algona*

Lee
Adrian Brinck (D) West Point
Carroll I. Redfern (D) Donnellson

Linn
Myron B. Oxley (D) Marion
Keith K. Kennedy (D) Center Point
Dale T. Crosier (D) Cedar Rapids
Richard M. Radl (D) Lisbon
Walter L. McNamara (D) Cedar Rapids
William R. Smith (D) Cedar Rapids

Louisa
Walter I. Conway (D) Muscatine
Dale H. Rickert (D) Wapello

Lucas
Tom Dougherty (D) Albia

Lyon
Arthur C. Hanson (R) Inwood*

Madison
(See Adair)

Mahaska
Eldon M. Morgan (D) Oskaloosa

Marion
Armour Boot (D) Pella

Marshall
Paul E. Craig (D) Marshalltown
Robert Rider (D) Marshalltown

Mills
(See Fremont)

Mitchell
(See Howard)

Monona
Elroy Maule (D) Onawa*

Monroe
(See Lucas)

Montgomery
(See Adams)

Muscatine
(See Louisa)

O'Brien
Marvin W. Smith (R) Paullina*

Osceola
(See Lyon)

Page
Leroy S. Miller (R) Shenandoah

Palo Alto
(See Emmet)

Plymouth
A. Gordon Stokes (R) LeMars*

Pocahontas
(See Humboldt)

Polk
Mattie B. Bogenrief (D) Des Moines
James T. Caffrey (D) Des Moines
James P. Denato (D) Des Moines
Lee H. Gaudineer, Jr. (D) Des Moines
Willie Stevenson Glanton (D) Des Moines
Walter F. Maley (D) West Des Moines
William D. Palmer (D) Des Moines
Bernard J. O'Malley (D) Des Moines
Clark R. Rasmussen (D) West Des Moines
Thomas A. Renda (D) Des Moines
William J. Reichardt (D) Des Moines

Pottawattamie
Edward Bremmer (D) Carter Lake
Mary P. Gregorson (D) Council Bluffs
Burl E. Scott (D) Shelby
Edward C. Webster (D) Council Bluffs

Poweshiek
Al Meacham (D) Grinnell

Ringgold
Quentin V. Anderson (D) Beaconsfield*

Sac
(See Ida)

Scott
Foster F. Felger (D) Davenport
Daniel F. Lawlor (D) LeClaire
Daniel F. Nagle (D) Long Grove
James D. Resnick (D) Davenport
Carroll Wright (D) Davenport

Shelby
Alfred Nielsen (R) Defiance*

Sioux
Elmer H. Den Herder (R) Sioux Center*

Story
Ray R. Gillette (D) Ames
Maurice G. Hausheer (D) Ames

Tama
Albert H. Detje (D) Traer

Taylor
(See Ringgold)

Union
(See Clarke)

Van Buren
(See Jefferson)

Wapello
Cleve L. Carnahan (D) Ottumwa*
Gene W. Glenn (D) Ottumwa

Warren
James L. Lynch (D) Indianola

Washington
James Quinn (D) Washington

Wayne
(See Decatur)

Webster
Dale M. Cochran (D) Eagle Grove
Vincent Mayberry (D) Fort Dodge

Winnebago
Harold Mueller (D) Manly*

Winneshiek
Urban F. Hageman (D) Decorah

Woodbury
James W. Burke (D) Sioux City
Donald V. Doyle (D) Sioux City
Leo D. Keleher (D) Sioux City
John Shannahan (D) Sioux City
James J. Wingert (D) Sioux City

Worth
(See Winnebago)

Wright
Ray V. Bailey (D) Clarion

(R)—Republican
(D)—Democrat
*—Reelected

STATE DEPARTMENT OF HEALTH



ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

Morbidity Report for Month of October 1964

Diseases	1964 Oct.	1964 Sept.	1963 Oct.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	316	108	155	Hancock, Jefferson, Johnson, Polk
Typhoid fever	1	0	1	Taylor
Smallpox	0	0	0	
Measles	19	13	34	Polk
Whooping cough	10	15	12	Des Moines, Marshall
Brucellosis	3	3	9	Buena Vista, Dubuque, Page
Chickenpox	161	19	39	Des Moines, Dubuque, Polk, Scott, Woodbury
Meningococcic meningitis	2	0	0	Polk
Mumps	210	58	374	Clay, Des Moines, Polk, Pottawattamie, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	47	26	40	Cerro Gordo, Polk, Scott
Rabies in animals	33	24	19	Butler, Emmet, Guthrie, Story, Washington
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	38	17	24	For the state
Syphilis	106	76	73	For the state
Gonorrhea	233	160	103	For the state
Histoplasmosis	1	1	1	Winnebago
Food intoxication	209	0	0	Dubuque
Meningitis (type unspecified)	4	4	2	Dickinson, Jackson, Johnson, Scott
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	0	0	Polk
Salmonellosis	10	8	4	Johnson, Polk
Tetanus	1	2	1	Sioux
Chancroid	0	0	0	
Encephalitis (type unspecified)	3	3	2	Jackson, Johnson, Van Buren
H. influenzal meningitis	1	1	0	Des Moines
Amebiasis	2	0	1	Boone, Jasper
Shigellosis	5	1	10	Buena Vista
Influenza	125	3	40	Polk

A Heartening Glance at the Past

An occasional review of not-so-ancient history reassures public health authorities, and refreshes them for the tasks remaining ahead of them. A chart in the Report of a Malaria Survey of the Upper Mississippi River Basin, July-October, 1940, shows that 38 cases of malaria were reported to the Iowa State Department of Health during the first 10 months of 1940, eight of them being relapsed cases in which first attacks had occurred in 1939. Sixteen had been reported in Dubuque County, four each in Scott and Wayne Counties, two each in Clayton and Des Moines Counties, and one each in Allamakee, Jackson, Jasper, Lee, Lucas, Monroe, Montgomery, Muscatine, Palo Alto and Van Buren Counties. Eight of these counties border the Mississippi River, and all of the rest, with the single exception of Palo Alto, are in the southern half of the state.

During the 24-year period since 1940, malaria has been almost eliminated from the United States. A check of our records here at the State Department of Health for the last 15 years fails to reveal a single case of malaria in which the patient acquired the infection in Iowa. Although we have had cases brought to our attention, investigation has shown that the infection has been acquired out of state, and furthermore, usually outside of the United States.

Malaria control programs begun during World War II by the U. S. Public Health Service and various health departments have been effective to the extent of almost completely eradicating the disease from the United States.

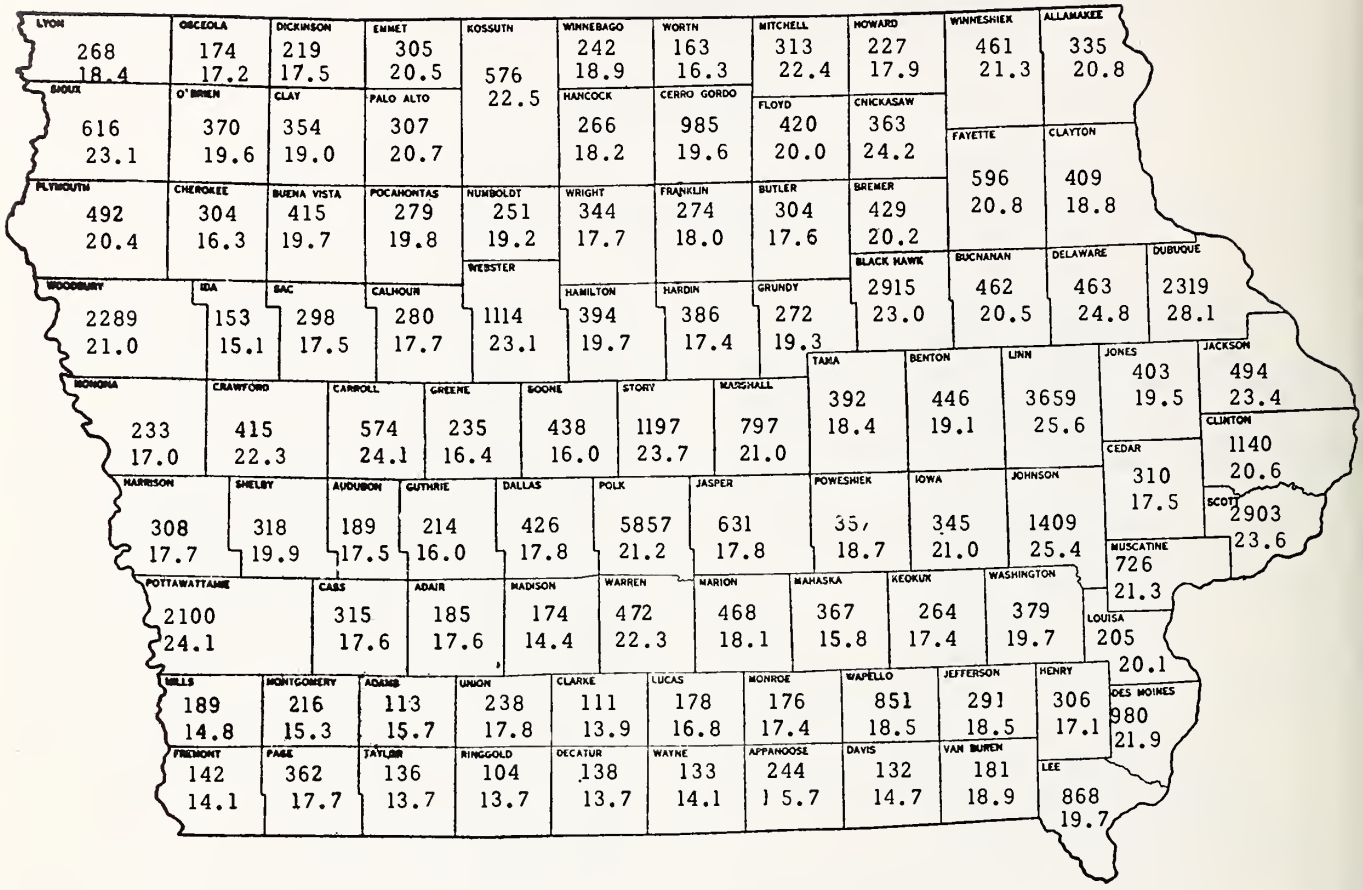
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AMA-ERF

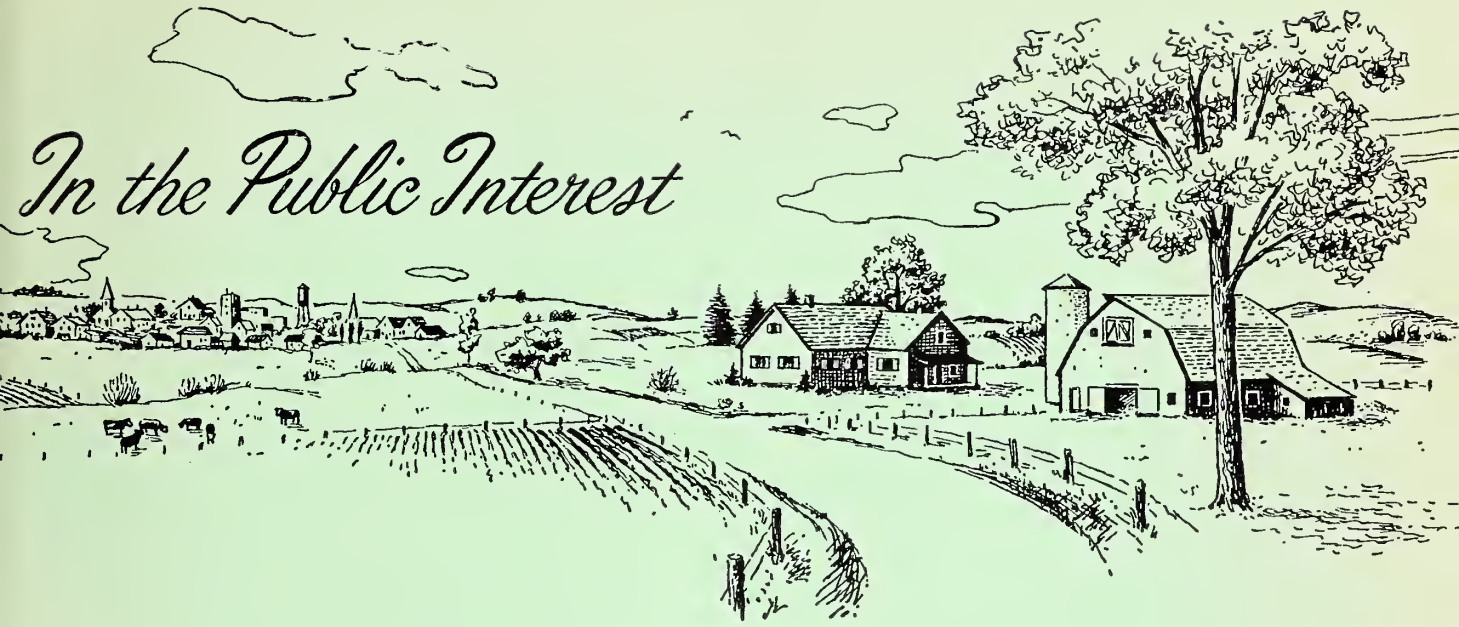
American Medical Association
Education and Research Foundation
535 N. Dearborn St., Chicago 10, Illinois

Live Births to Iowa Residents, by County, 1963



In the accompanying map, the upper figure for each county is the actual number of live births to residents; the lower figure is the live-birth rate per thousand of estimated population. The table shows the rankings of counties by 1963 live-birth rate.

1st Quartile		2nd Quartile		3rd Quartile		4th Quartile	
Rank	Live Births per 1,000	Rank	Live Births per 1,000	Rank	Live Births per 1,000	Rank	Live Births per 1,000
1. Dubuque	28.1	Fayette	20.8	51. Poweshiek	18.7	Keokuk	17.4
2. Linn	25.6	27. Palo Alto	20.7	52. Wapello	18.5	77. Osceola	17.2
3. Johnson	25.4	28. Clinton	20.6	Jefferson	18.5	78. Henry	17.1
4. Delaware	24.8	29. Buchanan	20.5	54. Tama	18.4	79. Monona	17.0
5. Chickasaw	24.2	Emmet	20.5	Lyon	18.4	80. Lucas	16.8
6. Pottawattamie	24.1	31. Plymouth	20.4	56. Hancock	18.2	81. Greene	16.4
Carroll	24.1	32. Bremer	20.2	57. Marion	18.1	82. Worth	16.3
8. Story	23.7	33. Louisa	20.1	58. Franklin	18.0	Cherokee	16.3
9. Scott	23.6	34. Floyd	20.0	59. Howard	17.9	84. Guthrie	16.0
10. Jackson	23.4	35. Shelby	19.9	60. Union	17.8	Boone	16.0
11. Webster	23.1	36. Pocahontas	19.8	Jasper	17.8	86. Mahaska	15.8
Sioux	23.1	37. Washington	19.7	Dallas	17.8	87. Appanoose	15.7
13. Black Hawk	23.0	Lee	19.7	63. Wright	17.7	Adams	15.7
14. Kossuth	22.5	Hamilton	19.7	Page	17.7	89. Montgomery	15.3
15. Mitchell	22.4	Buena Vista	19.7	Harrison	17.7	90. Ida	15.1
16. Warren	22.3	41. O'Brien	19.6	Calhoun	17.7	91. Mills	14.8
Crawford	22.3	Cerro Gordo	19.6	67. Cass	17.6	92. Davis	14.7
18. Des Moines	21.9	43. Jones	19.5	Butler	17.6	93. Madison	14.4
19. Winneshiek	21.3	44. Grundy	19.3	Adair	17.6	94. Wayne	14.1
Muscatine	21.3	45. Humboldt	19.2	70. Sac	17.5	Fremont	14.1
21. Polk	21.2	46. Benton	19.1	Dickinson	17.5	96. Clarke	13.9
22. Woodbury	21.0	47. Clay	19.0	Cedar	17.5	97. Taylor	13.7
Marshall	21.0	48. Winnebago	18.9	Audubon	17.5	Ringgold	13.7
Iowa	21.0	Van Buren	18.9	74. Monroe	17.4	Decatur	13.7
25. Allamakee	20.8	50. Clayton	18.8	Hardin	17.4		



Physicians Should Help

Make Sure That MAA Continues in Iowa

Iowa physicians are doubtless aware that Medical Assistance for the Aged (MAA) has virtually exhausted the funds that were provided it by the 1963 Iowa General Assembly and the federal government, despite the fact that the program wasn't initiated until five months after the start of the biennium for which money was initially appropriated. Even if the Legislative Interim Committee releases the additional money which the General Assembly provided as a contingency reserve, that sum together with federal matching will fall a bit short of keeping the program in operation to the end of the biennium, on July 1, 1965.

Some of the largest of the bills that MAA has had to pay have received considerable publicity, but with rare exceptions those big bills have been fully justified. Indeed it was those that the program was intended to lift from the shoulders of elderly Iowans who can barely meet their ordinary living expenses.

MAA is a good program, and it is now virtually national in scope. As the accompanying map shows, within four years after the adoption of the Kerr-Mills Act, 43 states and several territories had set up MAA programs, or were starting them. Iowa's is one of the very best, for it authorizes almost every type of health care and commodity for eligible persons at state-federal expense, and because its eligibility requirements are fair and to some degree flexible. Every physician in the state should assume responsibility for assuring its continuance.

The Kerr-Mills Act is preferable to its alternative, the King-Anderson proposal, in that (1) it permits benefits only to the needy—those who otherwise might not seek needed medical care, or would exhaust their meager resources in paying for it; (2) it permits local determinations of eligibility; and (3) in Iowa at least, it covers nearly all kinds of health services and materials.

In this state, a person 65 or more years of age is eligible (1) if his immediate need for care has been certified by a doctor of medicine or other legally qualified practitioner; (2) if he has paid or committed $50 or more for health care during the current calendar year; (3) if his income is no more than $1,500 if single, and $2,200 together with that of his spouse, if married; and (4) if his possessions, exclusive of a home, a car, the tools for carrying on a trade, and the cash-surrender value of life insurance, aren't worth in excess of $2,000 if single, or $3,000 together with those of his spouse, if married. The flexible feature is that recent expenditures for health care can be subtracted from slightly higher incomes to qualify elderly people for this type of aid.

The appropriation voted by the 1963 General Assembly of Iowa was $2 million per year, and the federal "matching" contribution was $2.4 million per year. It had been estimated that the number of eligibles would be 5,000, but since more than 6,000 qualified during the first nine months of the program and there doubtless will be more, it is evident that the Iowa Medical Society and the others who did the estimating were wrong. It can be said in their defense that there was no sound basis on

which to base a guess, but however that may have been, the fact is that the program will have to be financed to care for nearly 10,000 people per year, if it is to continue uncurtailed.

ACTIONS FOR DOCTORS TO TAKE

There are two things for doctors to do. First, they should urge state legislators to provide sufficient money so that, with the federal contribution, the MAA program can be maintained without any eliminations of benefits or stiffening of eligibility requirements. Second, they can make sure that physicians' and nurses' fees, hospitalization or nursing-home bills, and drug costs are as reasonable as possible in MAA cases.

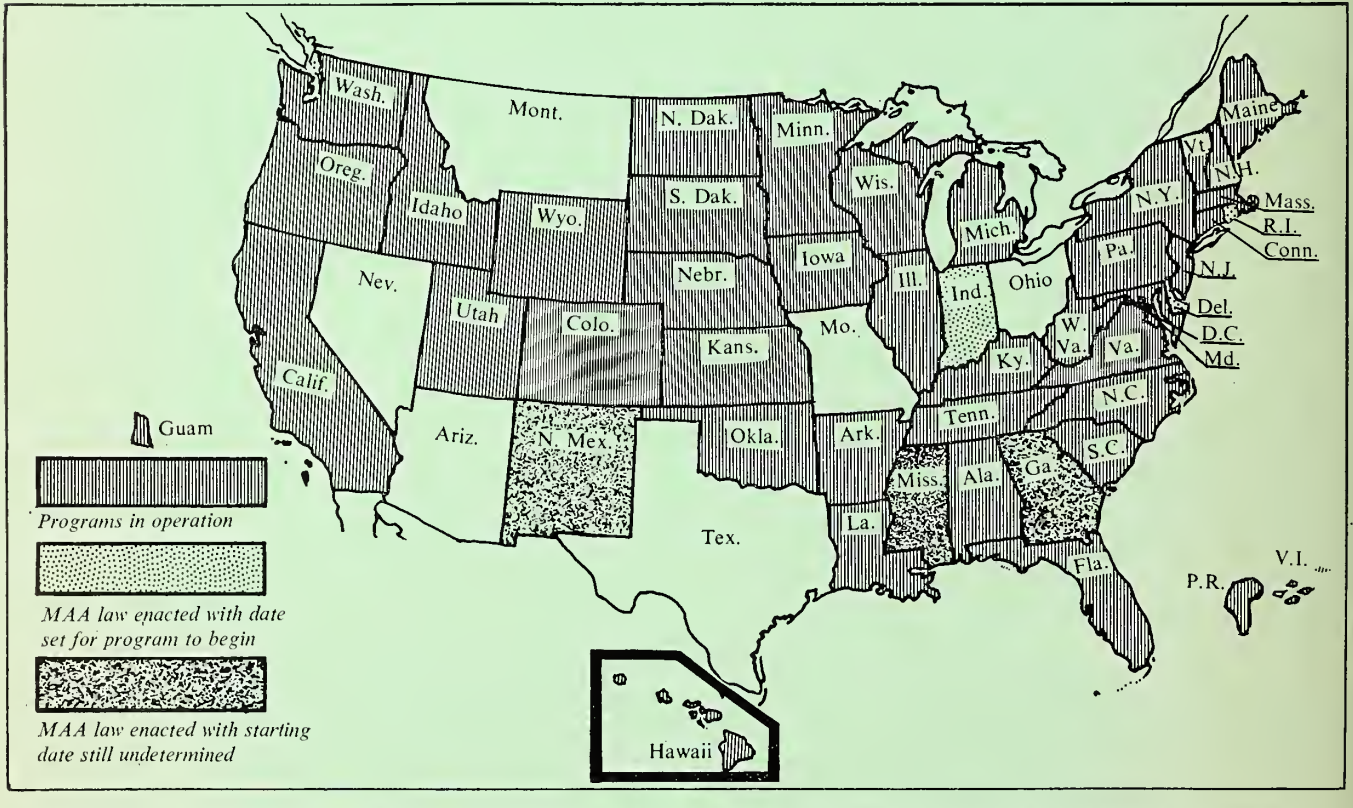
Legislators can be reminded that the program is meeting real needs, and that even if the King-Anderson Bill were to pass (though we surely hope it won't), it wouldn't provide a major fraction of the benefits that MAA has made available to economically marginal Iowans 65 years of age or older, during the past 11 months.

Now for the steps that physicians can take to keep MAA costs at a minimum. In an address to the IMS Fall Conference for County Medical Society Officers and Other Representatives, in Des Moines on September 13, Dr. Elmer M. Smith, director of medical services for the State Board of Social Welfare, asked doctors to consider the cost when they have a choice between providing nursing care for an MAA patient in his home, and sending him to a hospital or nursing home. He also asked doctors to refrain from seeing such patients more often than necessary; to avoid prescribing supplies that nursing-home patients should be provided by the institutions where they live; and, whenever there is a choice of equally effective medications, to prescribe the less expensive one and to continue it no longer than necessary.

MAA IS THE MEDICAL PROFESSION'S PROGRAM

Most of the faults that physicians have found in the Iowa MAA program have been corrected or are in the process of being remedied. Newly-licensed physicians are permitted to dispense to MAA patients, if circumstances warrant. Ophthalmologists may issue prescriptions to MAA patients for opticians to fill. And the IMS is in the process of making a new survey of county ranges of physicians' fees, which is a start toward correcting inequities and solving the problems regarding mileage and compensation for anesthesiology.

Physicians can be proud that organized medicine, at both the national and state levels, was a prominent sponsor of the Kerr-Mills Act and of the MAA programs that have implemented it throughout most of the country. They should realize that it coincides more nearly with their economic philosophy and that it leaves them greater freedom than any other publicly-financed program would be likely to do. Most importantly of all, since it is the program which their profession advocated, they should do all they can to make it succeed!



Within four years from the passage of the Kerr-Mills Act, 43 states and several territories had established or were in the process of setting up MAA programs. About 90 per cent of the nation's people live in those areas.

Woman's Auxiliary News

"Live Wisely to Enjoy Christmas"

After representing you, my Iowa Medical Auxiliary, at the National Safety Council Conference in Chicago, October 26-29, I came home determined to stress again the importance of a state-wide effort on our part, to make our Holiday Season a better one.

The Feast of Christmas, the most Blessed Season of the year, is coming soon. Let all Christians plan to make it not only a Holy Season but a safe season. Let us plan for family celebrations and reunions, giving religious activities prime significance. As families gather together, may they give themselves plenty of time for road travel. This can be the most hazardous time of the year, weatherwise.

To most families Christmas is not complete without a tree. Obtain a fresh one, a few days before Christmas. Stand the tree in water, wet dirt or sand at once, and add water daily. Be sure the tree-stand holds water.

The National Safety Council suggests flameproofing trees and greenery that are to be placed near candles or fireplaces. This can be done by mixing 9 ounces of Borax, 4 ounces of boric acid and 1 gallon of water. One-fourth tablespoon of low-sudsing detergent may be added to aid the penetrating qualities of the solution. Let this solution dry before decorating trees or using greens. There is no change in color or texture of the tree, and treated trees will not burn.

As a safety project, tags with the printed formula and instructions could be attached to all trees offered for sale. These also could be sent home with school children, girl and boy scouts, or could be delivered from door to door.

In decorating your trees, use only lights and wiring with the Underwriters Laboratories labels. Check old cords for loose connections. If extension cords are to be used, be sure they do not present a tripping hazard. Never overload circuits by having too many plugs in one outlet. Electric lights should not be used on metal trees because of the danger of electrocution.

Glass, metal or non-combustible materials are safest for decorations. If paper or cloth costuming is to be used for children, use the same flameproofing as is recommended for trees.

In choosing toys for children, purchase only those that are safely constructed. For older members of the family, consider a material gift of safety such as a fire extinguisher, seat belts, nonskid rugs, night-light or light-colored rain coat.

Allow plenty of light on walks and driveways for your guests. Make walks safe by sanding them, if covered with snow and ice.

If you decorate out of doors, run wires overhead, and use only weatherproof cords and lights. These, too, should carry an Underwriters label.

If you are out for an evening, be sure the baby sitter understands her responsibility and what to do in case of an emergency.

The National Safety Council can predict with startling accuracy the number who will die from car accidents during the holiday period. The Religious Leaders Conference has been urging business and industry to "dry up the office party" for the past several years. The Conference and Council urge you to make a contribution to Safety. Help save lives.

"Each time I take the wheel
Oh, Lord, I pray,
Grant that no harm shall come
Of me, today
See over hills for me,
On curves, stand by,
Post some bright Angel near
To see that I
Observe the playing child,
The old, less spry;
No act of mine must cause
Someone to die."

Good will toward men is a part of a good attitude toward safety. Make this a safe Christmas for your family and a Blessed and Joyous Christmas for All.

Mrs. H. A. Weis, *Safety Committee Chairman*

THE BOARD OF DIRECTORS OF THE WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY EXTENDS TO YOU ITS BEST WISHES FOR A MOST HAPPY HOLIDAY SEASON!

Rural Health

We have shaped our program and launched our campaign for *Better Health, Better World* in the rural areas of Iowa. We have once again offered the assistance of our Auxiliary to Miss Louise Rosenfeld, director of women's activities, Extension Service, Iowa State University, and to Mrs. J. S. Van Wert, women's Farm Bureau chairman.

Our goal in 1964-65 is to help promote better health among our rural friends and neighbors wherever there is a need and wherever our help is requested. We have asked all Rural Health chairmen or county Auxiliary presidents, where there are no chairmen appointed to establish a good working liaison between the Farm Bureau women's leaders, the County women's extension directors, 4-H leaders and themselves.

We believe that several areas of rural health need especially to be emphasized in Iowa.

1. A study of water pollution as it is tied in with a growing need for a good water supply everywhere, due probably to two factors—growing industrial uses of water and a mushrooming suburbia with its increasing needs.

2. An attempt to educate our rural public on the need for better immunization protection through the dissemination of good materials, and perhaps work toward immunization clinics where they may be needed. This is a good place for joint effort with our husbands' medical societies. Since our rural population is especially vulnerable to tetanus infection, adequate protection from tetanus is a "must" in our rural communities.

3. There are very acute shortages of both doctors and nurses in rural areas, and we feel that we can be of real service in helping to fill the vacuum by sponsoring Health Careers clubs in our small schools. Our interest may supply just the degree of encouragement that is needed. Besides programming, this may involve other things such as giving coke-and-chip parties or teas, and furnishing transportation for tours, meetings, etc. Yes, it may be hard to work this project into our busy lives, but it will be most rewarding, too.

4. Farm Bureau women's programs include Water Safety this year. Here is our chance proudly to produce our Auxiliary's safety program, SWAT (Safe Water Activity Training), and offer it to the Farm Bureau women. This will insure a good working relationship for you with these groups, I am sure.

If our Rural Health programs have not previously been replete with specific results, I feel we can make up for lost time, this year, with a good program and with a larger measure than before of Auxiliary energy, enthusiasm, follow through, and hard work!

MILDRED LEINBACH (MRS. S. P.)
Rural Health Chairman

Immunization Poster Project

Posters on immunization will be made available to any Auxiliary committee chairmen and members who are concerned with health education programs. The posters, furnished through the Department of Community Health and Health Education of the American Medical Association, will be used as displays throughout various communities.

This will be an excellent contribution to health education by the Auxiliary. These immunization posters will be available December 1, 1964. Write to the Woman's Auxiliary to the Iowa Medical Society, 529-36th Street, Des Moines, Iowa 50312, and the posters will be forwarded to you.

The objective of the program will be to place the posters around communities in places such as schools, department stores, banks, etc., where they will attract wide attention.

Here are six suggested steps to a successful poster project:

1. *Obtain approval* from your local medical society, and with its help, decide upon the best starting date.

2. Determine locations having the greatest public exposure, throughout your community, for placement of posters.

3. Estimate the number of posters needed, and order from the IMS Auxiliary office.

4. Request permission to display the posters from officials, property owners and others concerned, stressing the public service involved.

5. Deliver the posters promptly, and request that they be displayed prominently for a period of four to six weeks.

6. Arrange, if possible, for local newspaper publicity in connection with immunization and the posters. (Material for publicity purposes will be enclosed with your order of posters.)

Let's Get Proper Credit

In order for our State Auxiliary to receive proper credit for its AMA-ERF contributions, it is necessary that checks for the proceeds of fund-raising activities and for memorial contributions be made payable to *AMA-ERF Auxiliary Fund.* Checks should be mailed to the state AMA-ERF chairman, Mrs. R. L. Wicks, 204 South Story Street, Boone, Iowa 50036.

Current fund-raising projects include sale of AMA-ERF stationery and playing cards. Auxiliaries desiring stationery in large quantities, should write direct to:

Mr. Jack Casurella
AMA-ERF Auxiliary Promotion
535 North Dearborn Street
Chicago, Illinois 60610

Playing cards may be ordered direct from Mrs. Wicks.

"Auxiliary Activities Around the Hawkeye State"

Black Hawk County

The Black Hawk County Medical Auxiliary held its October meeting at a luncheon in the home of Mrs. Richard Driver. The speaker, Mrs. Howard Ellis, president of the State Medical Auxiliary, chose as her topic "The Responsibilities of a Doctor's Wife in This Changing World." Accompanying her was Mrs. Hazel Lammey, administrative secretary from the office of the Iowa Medical Society.

Projects for the month of October included the annual visual screening of pre-schoolers throughout the county.

During the week of the National Dairy Cattle Congress, the members of the Auxiliary manned the booth sponsored by the Black Hawk County Medical Society. The display titled "Life Begins," obtained from the University of Illinois, presented actual preserved fetuses at various stages of development, and diagrammatic drawings of normal labor. This proved to be a very magnetic attraction for the general public, and gave the volunteers an excellent opportunity to distribute pamphlets concerning the opportunities and rewards in medicine, and on the effects of present and impending legislation.

On October 15, the Auxiliary members were hostesses at a luncheon and style show at the Hotel President for wives of the physicians attending the Northeast Iowa Medical Conference.

MRS. L. T. WINNINGER

Cerro Gordo County

Mrs. H. G. Ellis, president of the Woman's Auxiliary to the Iowa Medical Society, was guest speaker at a Cerro Gordo County Medical Auxiliary meeting, Tuesday evening October 13, at the home of Mrs. Gerald L. Brady. Wives of all members of the Cerro Medical Society were invited to attend.

Mrs. Ellis spoke on the programs presented at the National Conference held recently in Chicago. She stressed the importance of everyone's active participation in politics, emphasizing the necessity of being informed on pending legislation concerning medical care, and stressing the responsibilities of the physician's wife. She cited the present failures of socialized medical systems in those countries where they prevail.

HEALTH CAREERS WORKSHOP

The Auxiliary to the Cerro Gordo County Medical Society in cooperation with Mercy Hospital, Park Clinic, Future Nurses Club and county dental and medical societies, sponsored a Health Careers Workshop in Mason City, October 16. Approximately 100 high school students from North Iowa registered. During registration, at Mercy Hospital, cocoa and doughnuts were served by the Mason City Future Nurses Club.

Sister Mary Presentation, Mercy Hospital administrator, welcomed the group, and Mrs. Carroll Adams, president of the Cerro Gordo Medical Auxiliary introduced the program. Following a roll call of schools and some music, a presentation of jobs available in medicine and the allied medical groups was made by Dr. J. E. Christopherson on medicine, Dr. J. F. Ollenburg on dentistry, and Mr. Justin Shares on pharmacy.

A panel group discussed the work of registered and practical nurses. Panelists were, Mrs. Jon Peterson, R.N., instructor at Mercy Hospital School of Nursing; Miss Sally Prior, student nurse; Leona Heagel, instructor at the Mason City Junior College School of Practical Nursing; and Miss Sandra Sleiter, a practical-nurse student. Miss Marie Von Kaenel spoke on the work of a laboratory technician, and Mr. James Chestnut spoke on the work of an x-ray technician.

Luncheon was served at the Pancake Inn. The afternoon meeting consisted of a tour of the new Mental Health Center of North Iowa, and a tour of Park Clinic and Mercy Hospital, where cokes were served.

The number of questions asked by those in attendance indicated great interest in this type of program.

Johnson County

The Johnson County Medical Society Auxiliary was organized in 1963. At this point we are experiencing *not-growing* pains. With a potential of 200 members plus, and with only 30 active members, it is difficult at times for us to avoid becoming discouraged by the lack of interest. Despite this, we 30 feel that there is a great need for an Auxiliary in Johnson County and have planned what we think is a very interesting program for this year.

At our October meeting, Dr. W. M. Kirkendall, president of the Johnson County Medical Society, spoke to us. His talk contained much food for thought. One of his statements was especially vital: "Doctors and their wives should be active in all of the health agencies, so that the money collected will be spent honestly and usefully."

We are planning to show the film on suicides entitled "Cry for Help," and are setting up a panel to discuss the film. The Medical Society, SAMA and WA-SAMA will be invited as our guests.

Since money, as in all organizations, has been a problem, we have held a garage sale on November 7. We hope that with this money we can publicize our activities and stir up more interest in the Auxiliary.

As a side line—I am one of the advisors of WA-SAMA, and that group has a very interesting program planned. The organization is very active, and from attending several of its board meetings, I learned again how wonderful it is to be a doctor's wife!!!

MRS. F. MILES SKULTETY

University of Iowa WA-SAMA

The first meeting of the University of Iowa Woman's Auxiliary to the Student American Medical Association was held on October 20, 1964. The program and decorations centered around the theme, "The Importance of Voting." The speaker was Dr. Henry W. Pribram, who is British and was educated at Cambridge University and St. Mary's Hospital in London, England, and who joined the University of Iowa faculty as an associate professor in January, 1964. Having lived where socialized medicine is practiced, Dr. Pribram discussed his experiences under that system.

SERVICE IS AIM OF WA-SAMA: As student wives, our aim this year is group-service projects. Visitations twice a month with patients at the new Johnson County Home are being started, and gift items are being made throughout the year for local hospitals and Woodward State Hospital.

FUND RAISING: A fund-raising dance will be held on December 5 at the Iowa City Knights of Columbus Hall for all University Hospital faculty and medical students. The theme is to be "Mistletoe Magic," and door prizes, entertainment and pictures are being planned.

ADVISORS: Advisors for 1964 are Mrs. Wayne Tegler, whose husband is a general practitioner in Iowa City, and Mrs. Miles Skultety, whose husband is a professor of surgery at the University of Iowa College of Medicine.

PURPOSE: The purpose for which WA-SAMA was established is to educate the medical student's wife in the problems, responsibilities and various organizations of the profession her husband is about to enter. It is the hope of the University of Iowa Chapter to fulfill this purpose this year through our educational programs, service projects, fund raising and social activities.

Lee County (North)

Lee County (North) Auxiliary has a membership of 21 and holds nine meetings each year. We have been pleased to have Mrs. Robert L. Kent join our number this year. Our meetings usually consist of morning coffees, and combine business with working projects. Widows are encouraged to continue membership and seem pleased to be part of the Auxiliary. They are some of our most active and enthusiastic members.

Our best money-making projects to date have been rummage sales and silent auctions. We find these projects most profitable and most workable for a small Auxiliary.

Our working projects this year have been: (1) to make "Johnny Coats" which will be sent to the World Medical Relief, Inc., Detroit, Michigan; (2) to persuade the local radio station to program a series of LP records titled "Mirror to the Mind" that are AMA-produced; (3) to encourage contributions for AMA-ERF from members and friends by means of an annual charitable contribution as a memorial for the deceased.

A number of Auxiliary members work with the local Hospital Auxiliary that assists in nursing scholarships. Applications are accepted from local high school girls, and then the girls are screened, interviewed, and selected. The women serving on this committee work in conjunction with the local hospital administrator.

Our Auxiliary works together with the County Medical Society whenever possible. Like most doctors and wives, we have written to Congressmen and Representatives to give our comments on all "medicare" bills. Needless to say, all of us have encouraged neighbors and friends to do likewise.

MRS. ROBERT MURPHY

Marion County

The Marion County Medical Auxiliary has had one meeting since the summer vacation.

Our main project is the county home. Every month, two of our Auxiliary members go to the home and visit with the patients, sometimes taking them candy or treats. On other occasions, some type of program is provided. Also, some of our members take patients for rides in the country.

One of the other projects discussed at our last meeting was the suicide-prevention program which is based on a film, "The Cry for Help." However, after this movie was previewed by some of the members of our Medical Society, Auxiliary and Police Department, the general opinion was that the film should not be shown to laymen, especially since Knoxville is a small town. Instead, it was suggested that we offer this film to the Police Department for showing to its personnel, and say that one or two doctors would be happy to explain some of the facts about suicide, and to answer any questions.

We are trying to get a guest speaker for one of our meetings.

Several ways of making money for our County Home and HELF have been discussed.

MRS. YME SLOTERDYK

Polk County

The Woman's Auxiliary to the Polk County Medical Society has been engaged in many worthwhile projects during the past few months.

On Wednesday, August 19, we served a tea for the graduating practical nurses. Approximately 175 nurses and guests were served.

On September 22 and 23 we served coffee and donuts to about 160 people attending the Athletic Injuries Clinic sponsored by the Polk County Medical Society.

The Woman's Auxiliary helped sponsor a series of mental health plays. These were presented October 5, 12, 19, and 26.

The Auxiliary assisted the Dental Auxiliary in mailing literature to Polk County doctors, osteopaths, and dentists' families requesting the substitution of popcorn, peanuts, toothbrushes, etc., for the usual gifts of candy and gum on Beggers' Night.

Our vision screening teams have participated in several screenings.

We are currently attempting to secure as much clerical help as possible for the Christmas Seal drive.

Several large projects loom in the immediate future, such as, the Legislative Ladies' Tea and Foreign Students' Weekend.

JEANNE COUGHLAN (MRS. D. W.)

POLK COUNTY HANDICAPPED CRAFT SALE—FALL 1964

The 21st Handicapped Craft Sale was held at Younkers the week of October 5. The proceeds from this sale netted $1,106.97 which was turned over to the approximately 125 physically handicapped adults participating in the sale by making and pricing their own handmade articles.

The 42 Polk County Auxiliary members worked as salesladies during the six-day sale. The members serving as day chairmen were Mrs. Dwight Wirtz, Mrs. John Bakody, Mrs. Maynard Meservey, Mrs. James Gould, Mrs. Henry Decker and Mrs. Matthew Lawler.

Mrs. Jesse McNamee handled publicity with the DES MOINES SUNDAY REGISTER, television, radio and weekly newspapers. Mary Jane Chinn of KRNT-TV, presented Mrs. Noble Irving, state Community Service chairman, as her guest, and showed articles made by the handicapped. Mr. Russ Van Dyke, on KRNT radio, interviewed Mrs. Floyd Burgeson on his noonday "Man on the Street" program.

There are six handicapped-craft sales a year in Iowa, in Sioux City, Waterloo, Dubuque, Fort Dodge, Spencer and Des Moines. The sales feature items such as needlework, rugs, leather goods, jewelry, children's toys, table mats, children's clothing, aprons, tea towels, pillow cases and other miscellaneous items. This is a worthwhile project of the Medical Auxiliary—especially from the public-relations standpoint. The project should have the interest of every member.

The Polk County Medical Auxiliary Board has voted to have Auxiliary members help sort and pack merchandise for each future sale.

We hope to see you at Camp Sunnyside.

MRS. WILLIAM J. MORRISSEY
MRS. JAMES W. CHAMBERS

Webster County

We started our activities last year with a luncheon in November. Mrs. Emerson Dawson reported on Health Careers. Mrs. Norman Schacht reported on the fine Future Nurses Club meeting held in Webster City in October. There are approximately 60 members in the club that we sponsor, and she felt we were well represented at the meeting.

We voted at that meeting to send $20.00 to the American Field Service, and also to send $42.00 to the Health Education Loan Fund.

In December we were entertained at dinner by our husbands at our annual Christmas dinner meeting. We have 42 active members in our club. We usually have four or five meetings each year.

Last spring a group of our members decorated two windows downtown to advertise Easter Seals.

Mrs. F. E. Giles made a tour of the Cherokee Mental Health Institute and gave an interesting report on it at our March meeting. At this same meeting, Mrs. Eric Swanson reported on the King-Anderson Bill. She encouraged each member to write not only to our Senators, but to our Representative in Washington, to voice our opposition to the bill. She then distributed paper, a pencil and an envelope to each member, and the letters were written on the spot and Mrs. Swanson mailed them.

Mrs. J. G. McCarroll reported that we had $74.00 to send to the American Medical Association Education and Research Fund. This was money realized from the sale of cards and stationery to the members. We also plan to use the Medallion Christmas Cards for additional revenue to support the AMA-ERF.

Mrs. Dan Egbert entertained the Auxiliary in her home with a coffee, in June, for our last meeting of the year. Our members were encouraged to subscribe to the BULLETIN.

Our largest and most rewarding project is the Handicapped Craft Sales. We held our first sale in 1961. This year Mrs. R. E. Drown and Mrs. Paul LaPorte served as co-chairmen, and the sale netted $413.20.

In July our members furnished transportation for the Handicapped Children's Clinic held in our city each year.

Our favorite meeting and an evening we always enjoy is our annual picnic with the Medical Society in the summer.

MRS. ROY M. HUTCHINSON

Webster City FNC Changes to Health Careers

The Webster City Future Nurses Club has recently been renamed the Health Careers Club. Any boy or girl interested in a career in the medical field as a doctor, nurse or technologist may now join.

The new officers for the 1964-65 year are president, Jennifer Curran; vice president, Bonnie Markwardt; secretary, Crystal Burger; treasurer, Sheila Fisher and historian, Diana Stuhr.

At the second meeting of the club Dr. E. F. Brown, Webster City physician, was speaker and leader of the question and answer period. "The Million Club," a film concerning seven cases of cancer, was also shown.

Future plans for the club include a field trip to the Cherokee Mental Health Institute next spring.

The next meeting of the Health Careers Club will feature a psychiatrist from Ames, speaking about teen-age problems.

Homo Sapiens

In its original design, the body of man was no doubt a thing of beauty, grace and proportion; but *homo sapiens,* despite his superior intelligence, has succeeded in making his body the most unsightly of all. A perfect human specimen is so rare that very few can qualify.

The elegantly-clad model, with her raw bones, countable ribs and protruding spinous processes like the skeleton of a dinosaur, is not a body to admire; nor does the luxuriously-clad and girdled matron, with her stay-imprinted folds of skin, arouse admiration for the human form. Similarly, the male contours duplicate the unsightly anomalies of the female; both sexes, through ignorance, error and abuse, are guilty of heresy to the most highly evolved structure nature has produced.

In his SONG OF WILD LAUGHTER, Jack Couffer, extolling the sure power and sleek litheness of a giant cat and the proud poise, grace and agility of an antelope, declares man's body to be a "miserable thing." When one observes the exquisite hummingbird, the exotic tropical fish, the noble Arabian horse—three of nature's most superb creations—man seems almost reptilian in his doughy and knobby nudity.

Yet was man not made in God's image!

—CARL O. RICE, M.D., *Editor*
MINNESOTA MEDICINE, November, 1964

The Widower

He that outlives a wife whom he has long loved sees himself disjoined from the only mind that has the same hopes, and fears, and interests; from the only companion with whom he has shared much good and evil; and with whom he could set his mind at liberty to retrace the past or anticipate the future.—Samuel Johnson.

Thanks to Senator Miller

At the October meeting of the State Board of Directors, the Auxiliary Legislation Chairman was asked to forward a thank you telegram to Senator Jack Miller regarding his appearance on television Monday evening, October 26. Following is the message:

"Your TV appearance on NBC was excellent. As doctors' wives we especially appreciated your clarifying the Medicare issue. All the reports we have received were most favorable. Thank you." Mrs. R. F. Nielsen, Chairman, Legislation Committee.

AMA-ERF Fund Raising Projects

Christmas Cards
Note Paper
Playing Cards

Mrs. R. L. Wicks, Chairman
204 South Story Street, Boone 50036
or
Woman's Auxiliary Office
529-36th Street, Des Moines 50312

The Auxiliary's Pledge of Loyalty

"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 50312
President-Elect—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104
Recording Secretary—Mrs. M. E. Olsen, Minden 51553
Corresponding Secretary—Mrs. C. W. Latchem, 942 56th Street, Des Moines 50312
Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312
Editor of THE NEWS—Mrs. J. F. Throckmorton, 1201 64th Street, Des Moines 50311
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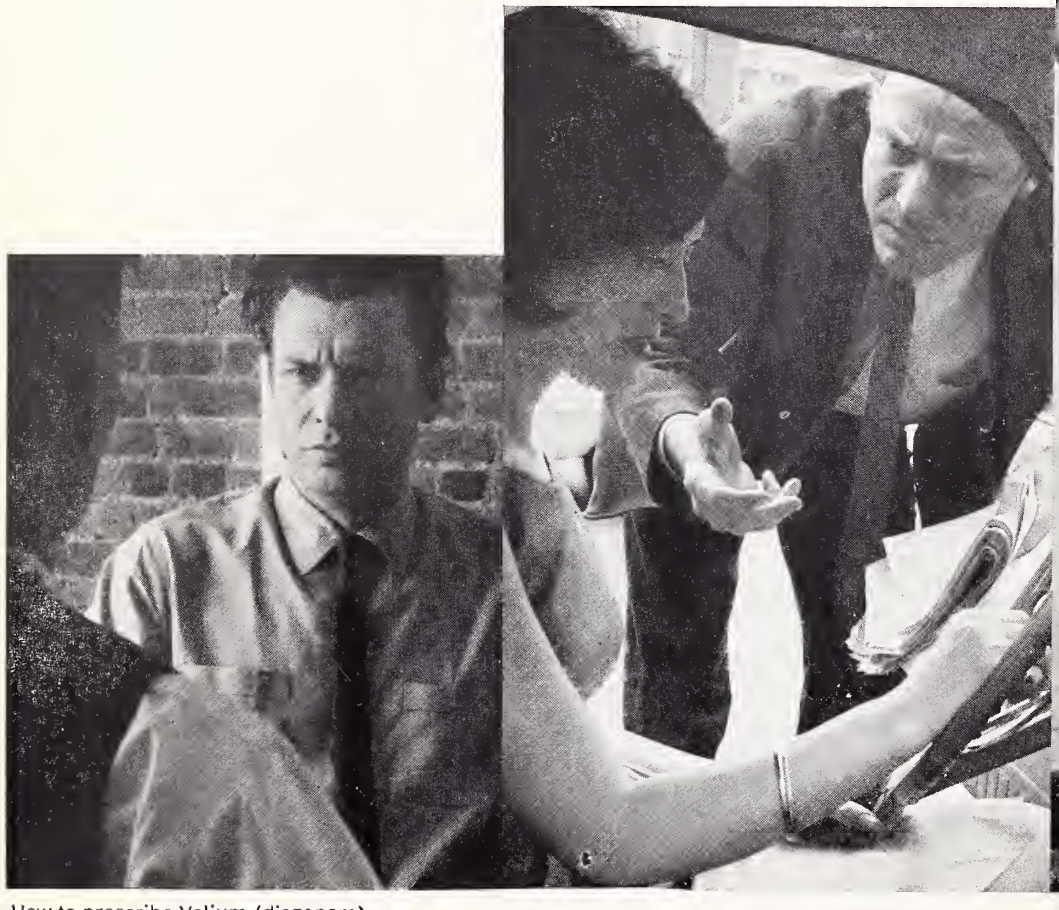
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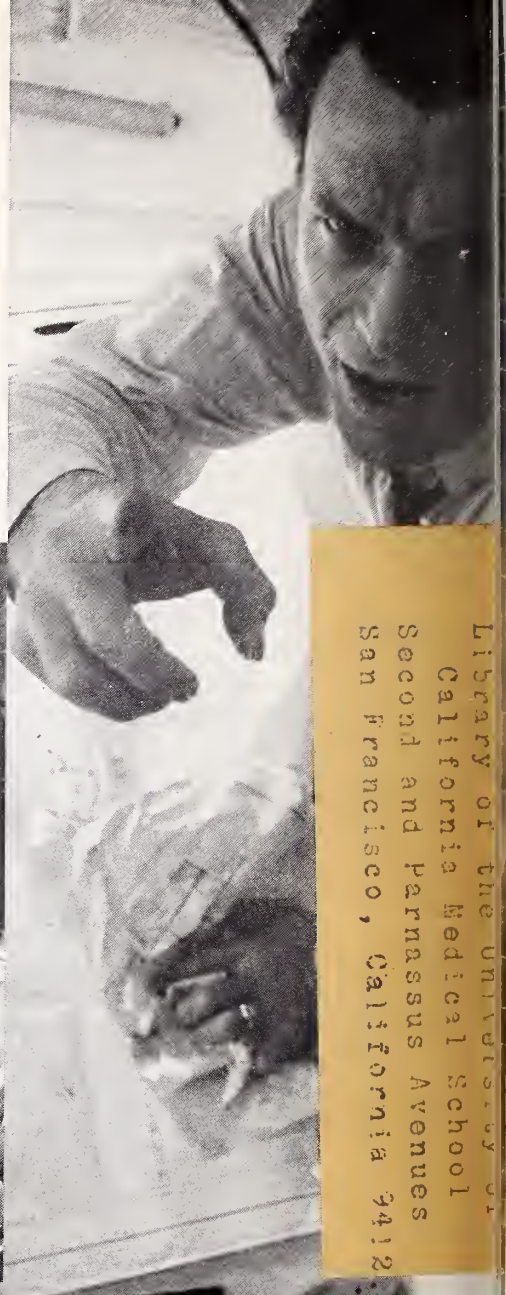
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Valium (diazepam) may also be useful in acute agitation due to alcohol withdrawal.

Valium (diazepam) may be of use to alleviate muscle spasm associated with cerebral palsy and athetosis.

Dosage and administration	*Usual daily dose*
Mild to moderate psychoneurotic reactions: Manifested by anxiety-tension alone or with depressive symptomatology, agitation, restlessness, psychophysiological disturbances	2 mg to 5 mg, 2 or 3 times daily
Severe psychoneurotic reactions: Where severe anxiety, fear, agitation, aggression or hostility exist alone or with depressive symptoms	5 mg to 10 mg, 3 or 4 times daily
Alcoholism: As an aid in symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis	10 mg, 3 or 4 times during the first 24 hours; reducing to 5 mg, 3 or 4 times daily as needed
Muscle spasm associated with cerebral palsy or athetosis	2 mg to 10 mg, 3 or 4 times daily

Contraindications: Valium (diazepam) is contraindicated in infants, patients with a history of convulsive disorders or patients with a history of glaucoma.

Warning: Valium (diazepam) is not of value in the treatment of psychotic patients, and for this reason should not be employed in lieu of appropriate treatment.

Precautions: In elderly or debilitated patients, it is important to limit the dosage to the smallest effective amount to preclude the development of ataxia or oversedation (not more than 1 mg, 1 or 2 times daily initially, to be increased gradually as needed and tolerated). As is true of all CNS-acting drugs, until the correct maintenance dosage is established, patients receiving Valium (diazepam) should be advised against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving an automobile during the period of Valium (diazepam) therapy is not recommended. In general, the concurrent administration of Valium (diazepam) and other psychotropic agents is not recommended. If such combination therapy is used, careful consideration should be given to the pharmacology of the agents to be employed with Valium (diazepam)—particularly with known compounds which may potentiate the action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants.

Since Valium (diazepam) has a central nervous system depressant effect, patients should be advised against the simultaneous ingestion of alcohol and other central nervous system depressant drugs during Valium (diazepam) therapy. Safe use of Valium (diazepam) during pregnancy has not been established. The usual precautions are indicated when Valium (diazepam) is used in the treatment of anxiety states where there is any evidence of impending depression; particularly the recognition that suicidal tendencies may be present and protective measures may be necessary. The usual precautions in treating patients with impaired renal or hepatic function should be observed.

Side effects: In clinical use, fatigue, drowsiness and ataxia have been reported; in most instances these are dose-related and may be avoided by proper dosage adjustment. Mild nausea and dizziness may occur on occasion. As with any new agent, when it is administered for protracted periods of time, periodic blood counts and liver function tests are advisable. Abrupt cessation after prolonged overdosage may, in some patients, produce withdrawal symptoms (*e.g.*, convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and Librium® (chlordiazepoxide HCl). Changes in EEG patterns have been observed in patients during and after Valium (diazepam) treatment.

Paradoxical reactions, such as excitement, depression, stimulation, sleep disturbances, acute hyperexcited states and hallucinations have been reported. Other side effects noted have been blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash.

Valium (diazepam) is available as 5-mg and 2-mg tablets. For convenience and economy in prescribing, both strengths are supplied in bottles of 50.

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